Network Video Server

Model 550000

User's Guide V1.1

FCC Compliance Statement

The user manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is
  connected.
- Consult the dealer or an experienced radio/TV technician for help.

Network Video Server
550000 User Manual
Copyright March 2006

Important Notice

1. The NETWORK VIDEO SERVER is not weatherproof so that you should be well aware of environment specifications that are included in the manual. In case of outdoor use, where it needs additional weather criteria, you should equip weatherproof case to protect NETWORK VIDEO SERVER from weather, moisture, or temperature (higher or lower than specification). To clean the NETWORK VIDEO SERVER cleaning, gently wipe with clean dry cloth.

2. Be sure to use the adapter that is provided with the Network Video Server. Connecting the NETWORK VIDEO SERVER directly to an adapter other than 12V DC may cause electric damage to the NETWORK VIDEO SERVER.

3. Be caution in handling the NETWORK VIDEO SERVER, as physical shocks may harm the product.

4. In the event that the NETWORK VIDEO SERVER does not function properly, please contact your INTELLINET NETWORK SOLUTIONS dealer for assistance. Do not disassemble the product, as this may void the service warranty.

5. It is important to carefully examine the contents upon opening the package. If there are any components missing, please contact your INTELLINET NETWORK SOLUTIONS dealer. Follow the instructions listed in this manual before assembling and operating the device and associated peripherals. Following the documented installation procedure can prevent damage caused by incorrect operation and avoid problems during installation.

6. The laws in your country may prohibit the use of surveillance devices. Be sure to review the laws in your country and region and obtaining the required authorization prior to installing and operating surveillance devices in your network.

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PRODUCT OVERVIEW

About NETWORK VIDEO SERVER

The NETWORK VIDEO SERVER is a network CCD camera server with an integrated Internet Server, image compression device, flash memory, and many other features. No other hardware is necessary for use. The NETWORK VIDEO SERVER relays video source from a CCD camera to network and provides real time images over networks and the Internet. Simply provide power and connect a RJ45 LAN plus video cable to the NETWORK VIDEO SERVER. NETWORK VIDEO SERVER utilizes JPEG image compression and Linux operating system. JPEG and Linux enable NETWORK VIDEO SERVER to transfer high quality images faster and with a greater degree of reliability than standard JPEG systems.

Network Video Server User's Guide

Main Features and Benefits

Convenient Operation

The NETWORK VIDEO SERVER is a standalone system with built-in CPU requiring no special hardware or software such as PC frame grabber cards. The NETWORK VIDEO SERVER supports both Active X mode for Internet Explorer and JAVA mode for Internet Explorer and Netscape Navigator. Therefore, all that is required is a common web browser, such as Microsoft Internet Explorer 4.x or above.

Open Standards

The NETWORK VIDEO SERVER supports TCP/IP networking, SMTP e-mail, HTTP and other Internet-related protocols; the NETWORK VIDEO SERVER can be used in a mixed operating system environment with Windows, Unix, Mac and OS/2. It integrates easily into other www/Intranet applications and CGI scripts.

Simple Administration

Using a standard web browser, you can configure and manage the NETWORK VIDEO SERVER directly from its own embedded web pages. The embedded operating system is upgradeable through the network; please check with your local INTELLINET NETWORK SOLUTIONS dealer for firmware upgrades.

External Devices

The auxiliary Input/Output Connector on the camera allows you to connect your NETWORK VIDEO SERVER to a variety of external devices; such as IR-sensors, switches, and alarm relays.

Security

Your NETWORK VIDEO SERVER includes a self-contained web server, which means that digital images can be secured like any other Internet host. Your Network Administrator, using the unit's security settings in combination with an organization's Internet firewall, normally implements data protection. The Administrator can decide whether individuals, groups, or the whole world may access the camera. The NETWORK VIDEO SERVER supports multi-user password protection

Compression and Performance

With an adaptive frame rate dependent on the image and lighting conditions, the NETWORK VIDEO SERVER delivers JPEG images at up to 30 images per second.

Network Video Server User's Guide

Embedded Linux Operating System

NETWORK VIDEO SERVER uses an embedded Linux operating system within its 32bit RISC CPU. Linux like other UNIX is one of the most stable operating system available. There is very little chance of the operating system crashing.

Real-time JPEG compression

Video input can be efficiently compressed into packets of JPEG images without delay.

Optimal compression engine makes the equivalently excellent image with much smaller size. There is no more sacrifice in remote monitoring and storage. Ten levels of compression ratio and three sizes of image resolutions are easy to meet your requirement.

Broad Range of Applications

With today's high-speed Internet services, the NETWORK VIDEO SERVER can provide the ideal solution for live video images over the Intranet and Internet for remote monitoring. The NETWORK VIDEO SERVER allows remote access from a web browser for live image viewing and allows administrator to manage and control the NETWORK VIDEO SERVER anywhere and any time in the world. Apply the NETWORK VIDEO SERVER to monitor various objects and places such as homes,, offices, banks, hospitals, child-care centers, amusement parks and other varieties of industrial and public monitoring. The NETWORK VIDEO SERVER can also be used for intruder detection; capture still images for archiving and many more applications.

Developer's technical support

The high-performance NETWORK VIDEO SERVER can be integrated into many applications under perfect control of budget. The complete programming interface and standard JPEG format can ease and speed developer's task.

Free Application Software

IP installer – for quick installation

Upgrade software – for the remote upgrade

Multi-Viewer – for viewing 4 cameras

PDA Viewer – for viewing the camera on Windows CE PDA devices.

Network Video Server User's Guide

System Requirements

Network

10Base-T Ethernet or 100Base TX Fast Ethernet

Recommended PC or Notebook to Access the NETWORK VIDEO SERVER.

System requirement:

CPU : Pentium II, 266 MHz or above

Memory Size: 32 MB (64MB recommended)

VGA card resolution: 800x600 or above

Web Browser:

Internet Explore 5.0 or above (Active X & JAVA Mode-Image View for Windows OS and JAVA
Mode – Image View for other OS)

Netscape 6.0 or above (JAVA Mode – Image View)

Multi-View Applications:

Support OS: Win 98, Win 98 SE, Win 2000, Win Me, Win XP

System requirement for Multi-View:

CPU: Pentium III, 450 MHz or above

Memory Size: 128 MB (256MB Recommended)

VGA card resolution: 800x600 or above
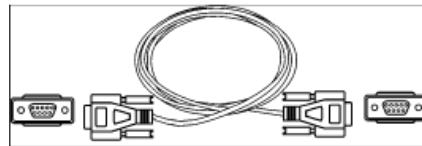
PHYSICAL DESCRIPTION

Contents

Carefully remove all items from the package. In addition to this User's Guide, be certain that you have:

☑ **NETWORK VIDEO SERVER**   ☑ **Camera control cable**

☑ **Power Adapter**   ☑ **Software CD**

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Copyright by
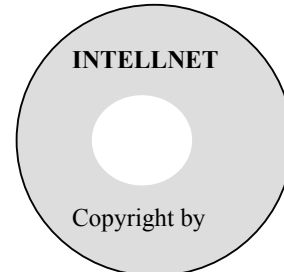
☑ **I/O Terminal connector**   ☑**Quick Installation Guide**

INTELLINET
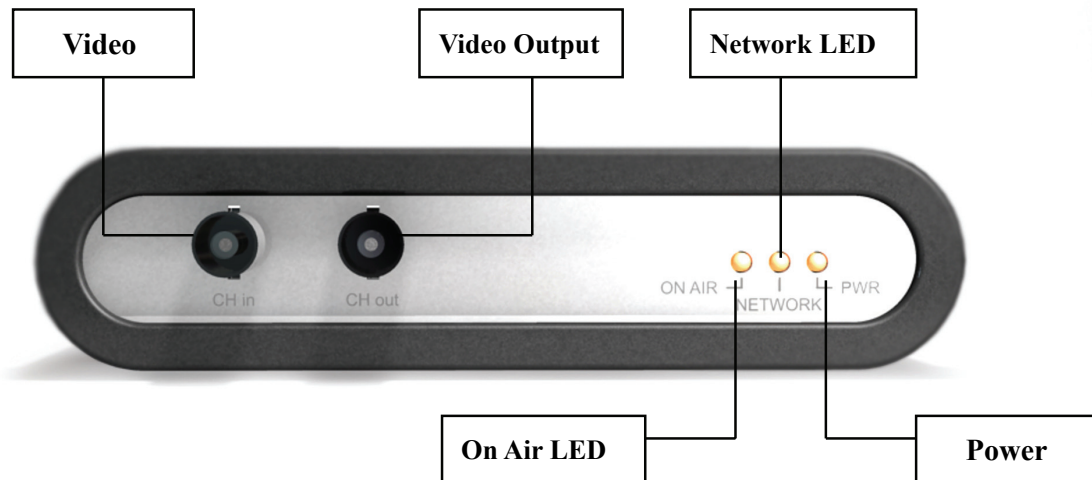
Network Video Server

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Quick Installation Guide
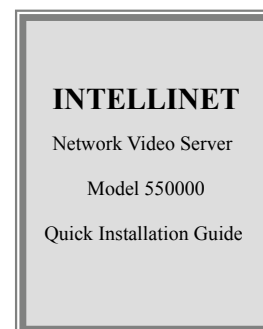
* **If any item is missing, or if you find any damage or mismatch, promptly contact your INTELLINET NETWORK SOLUTIONS dealer for assistance.**

Network Video Server User's Guide

Front Panel

Video	Video Output	Network LED

CH in   CH out

ON AIR   NETWORK   PWR

On Air LED	Power

Video Input: To input video signal through a coaxial cable
Video Output: To output video signal through a coaxial cable.
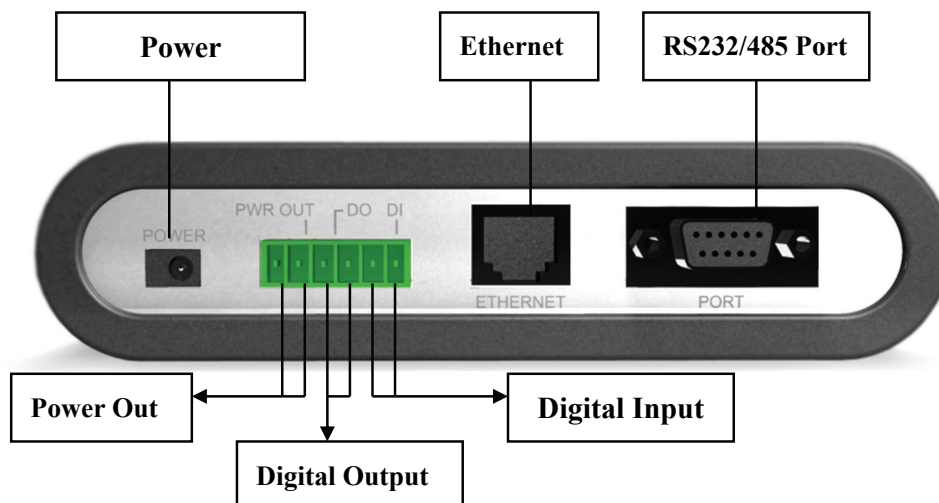   (Roof-through from "Video Input" BNC connector)

PWR LED (RED): This LED indicates the status of Power on and off.
NETWORK LED (GREEN): This LED indicates the status of network.
ON AIR LED (GREEN): This LED indicates the operating status.

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Rear Panel

Power Connector: Only use the AC Adapter provided by your dealer to avoid any possible damage from electric shock.

Power Out, Digital Input, Digital Output: To connect external devices such as infrared Sensors, alarms, or motion detectors (please refer to **Appendix F – The I/O Connector**).

Ethernet Connector: Connect 10baseT Ethernet or 100base TX Fast Ethernet cable.

RS232 Cable Connector: To connect external devices such as external pan/tilt/zoom mechanism, or directly to a serial port for configuration (please refer to **Appendix G - RS 232 Cable & Pan/Tilt/Zoom Control**).

> ## NOTE
> **Pan/Tilt/Zoom control interface of NETWORK VIDEO SERVER is initially set to support RS485. If your pan/tilt/zoom camera uses RS232C interface, then, change the control interface of NETWORK VIDEO SERVER as shown in page 60.**

\

Installation Overview

Installation Summary

- Connect Ethernet and Power to NETWORK VIDEO SERVER on local network for configuration
- Insert a program CD of NETWORK VIDEO SERVER to a PC on local network
- Assign an IP address with IP installer to NETWORK VIDEO SERVER and configure administrator's condition
- Configure Users and Access Rights

Connecting

- Connect Ethernet Cable to the Ethernet port in the rear
- Connect the power supply to a power supply port in the rear
- Confirm that the LED of ON AIR and Ethernet port blinks.

RS232 Cable
(optional)

Power Supply Connector

RJ45 Ethernet Cable

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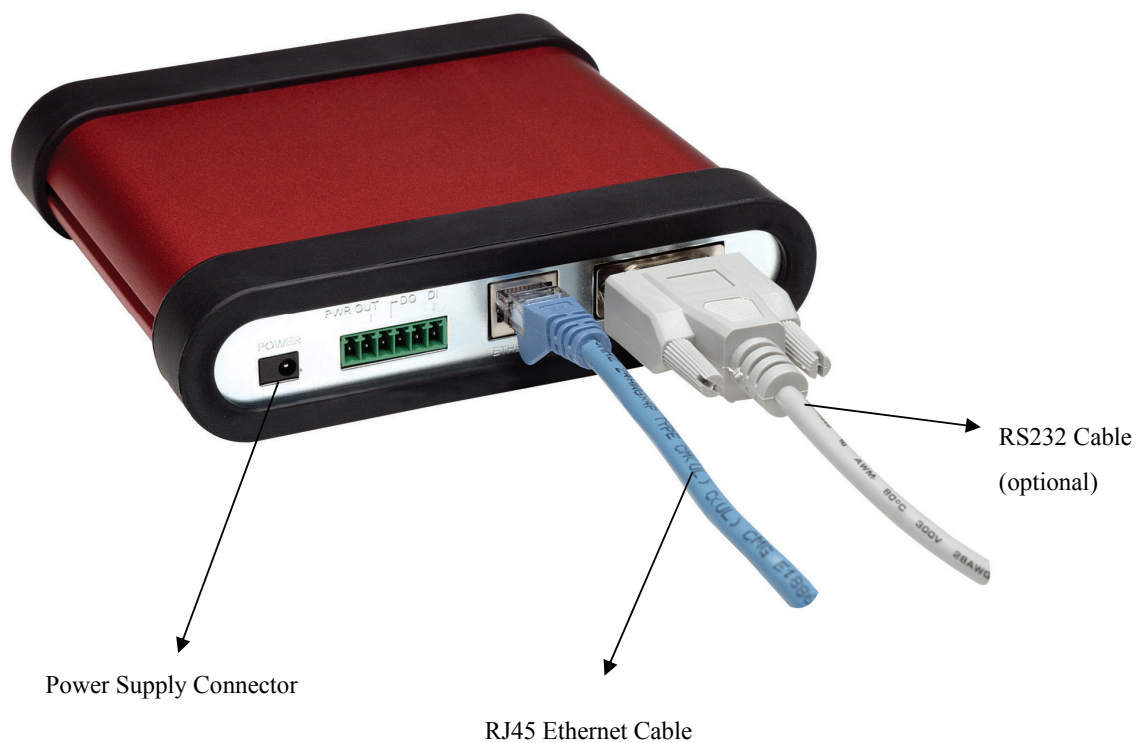
ASSIGNING IP ADDRESS & ACCESSING NETWORK

VIDEO SERVER'S HOMEPAGE

Access via IP Addresses

To access the NETWORK VIDEO SERVER, you need to assign an appropriate network IP address.

Important

To access NETWORK VIDEO SERVER, you first should assign an appropriate IP address. When you assign an IP address to NETWORK VIDEO SERVER, make sure to use an unoccupied IP address which is in the same subnet as the rest of your Network

• **Network IP Address**:

A network IP address is an identification code for computers or devices on a TCP/IP network. Networks using TCP/IP protocol route messages based on the IP address of the destinations within a closed Network. IP addresses can be assigned at random as long as each one is unique. However, connecting a private network to the Internet requires using registered, public IP address to avoid duplicates.

IP address can be acquired from a network administrator or an Internet service provider.

• **MAC** (Ethernet) **Address (Media Access Control Address)**

MAC address is a hardware identification code that uniquely identifies each device of a network. The MAC layer interfaces directly with the network media. Consequently, each type of network media requires a different MAC layer. The MAC address of NETWORK VIDEO SERVER is a 12-digit number. A unique MAC address can be found on the label at the bottom of each Network IP Camera.

NOTE

Please run the IP address installation program (IP Installer.exe) on a PC that is connected to the same local network as the NETWORK VIDEO SERVER**.**
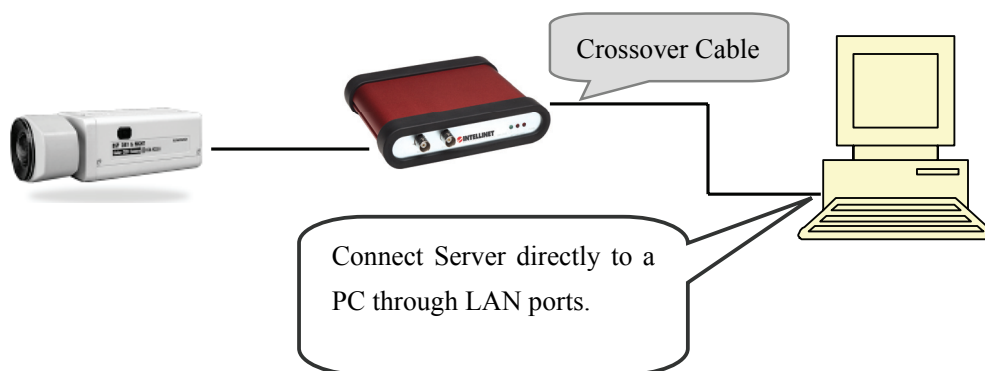
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Installing NETWORK VIDEO SERVER in your Network

1. Connecting with direct cable (Non Crossover UTP cable). Used when connecting the NETWORK VIDEO SERVER to a switch, hub or router.
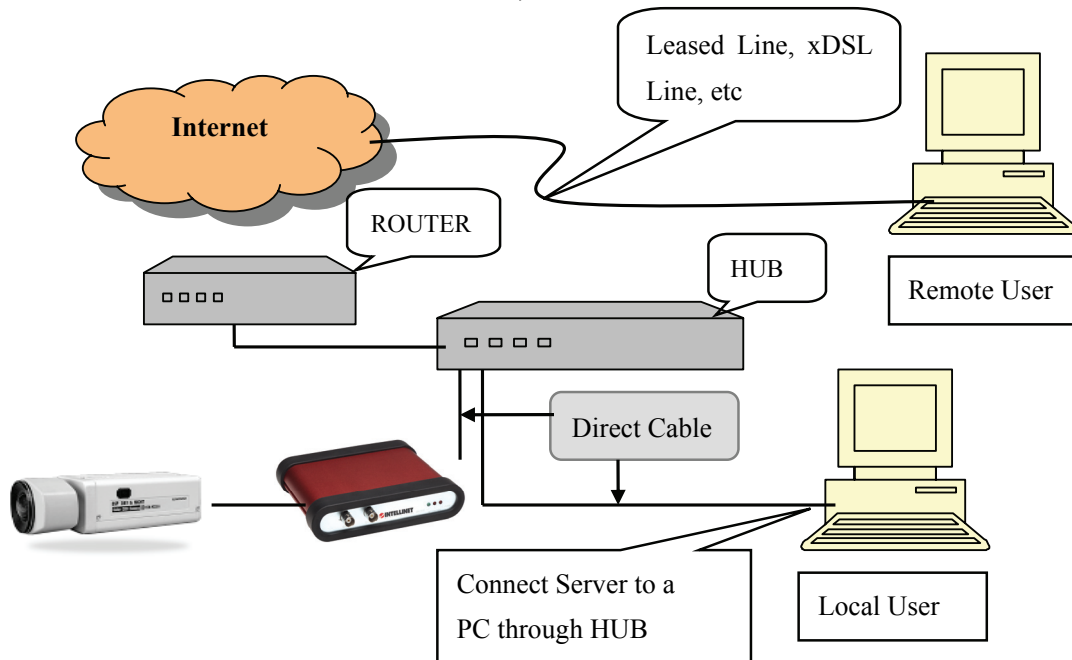
2. Connecting with Crossover UTP Cable. Use the crossover cable to directly connect the NETWORK VIDEO SERVER to a PC.

Network Video Server User's Guide

Installation Using Windows IP Installer

To install an IP address, you should use the IP Installer provided with NETWORK VIDEO SERVER.

1) After you start IP INSTALLER it scans your network for available NETWORK VIDEO SERVERS and NETWORK IP CAMERAS. IP INSTALLER displays all devices found in the list box.

2) In order to change one particular NETWORK VIDEO SERVER (or NETWORK IP CAMERA), simply highlight the entry in the list box. As you do that the fields below will be populated with the devices current settings.

3) Enter a new IP Address, Gateway Address, Subnet Mask, (optional) DNS Server Address along with the Admin's ID (admin) and Admin's Password (admin).

4) Enter a new IP Address, Gateway Address, Subnet Mask, (optional) DNS Server Address along with the Admin's ID (admin) and Admin's Password (admin).

5) Click on "Change Network Configurations".

6) Wait for the Success Message.
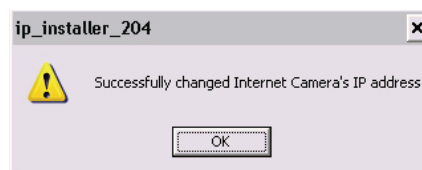
Note: The MAC Address can be found on the underside label of the NETWORK VIDEO SERVER. The MAC Address always starts with MNS.

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Network Video Server User's Guide

Information on IP Addresses

1. If you do not know which IP Address you have to enter in IP INSTALLER you should ask your Network Administrator for an available IP Address.

2. In case you are installing Network IP Camera in Home Network which communicates to the Internet using a Broadband Router, you should perform the following steps:

2.1. Find out the IP Range of your Network.
<u>Example: Windows XP Home Edition</u>
Click on: START -> Settings -> Network Connections.
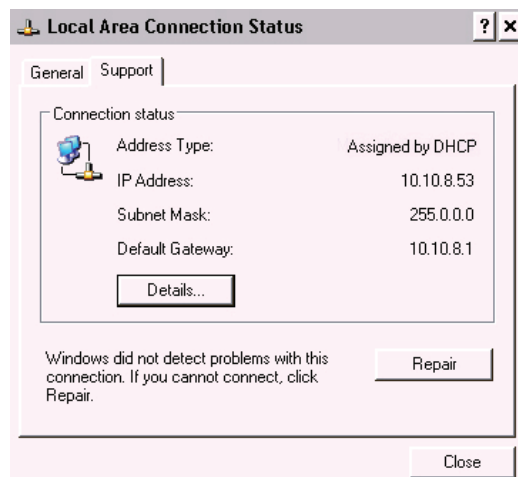Double-Click the Local Area Connection Icon and activate the Support Tab.

In the example above the Default Gateway is 10.10.8.1. That needs to be entered in IP INSTALLER as the GATEWAY ADDRESS. In the example above the IP Address of the PC is 10.10.8.53; the camera can therefore have an IP Address of 10.10.8.xxx.

2.2. Find a free IP Address for NETWORK VIDEO SERVER
You need to find out which IP Address is not taken by any PC in the network, If you have a Router you can look at the DHCP Server configuration. If your PCs all obtain an IP Address from the Router you can assign an IP Address to the camera which is at the end of the DHCP range. Example: DHCP Range from 10.10.8.20 – 10.10.8.199
An IP Address at the end or beyond the DHCP range can be used for NETWORK VIDEO SERVER.
To verify that the IP Address is not taken you need to run the PING command from the command prompt for that IP Address, i.e. ping 10.10.8.201.
If address 10.10.8.201 is not responding you can safely use it as the IP ADDRESS in IP INSTALLER.

Network Video Server User's Guide

Assigning IP Address by using Hyper Terminal (Advanced Users only)

This chapter is for advanced users only. Normally it is not required to access the camera via Hyper Terminal. The installation via IP INSTALLER is the preferred method. You may skip this chapter and continue with "Accessing NETWORK VIDEO SERVER Homepage".

Configuring Hyper Terminal

Hyper Terminal is a basic program for Windows 9x/NT/2000/XP. A PC can communicate with external devices through the serial port by using this program. The steps you should take to set the Hyper Terminal are as follows in the case of Windows 2000 OS:

① Start → Programs → Accessories →

　Communications → Hyper Terminal.

　Select one of the icons and then enter an

② Select a serial port of PC, then click "OK"

　button. (Usually COM1 or COM2 is

　recommended)

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③ Configure bit/sec as 19200 and leave other settings at the default values.
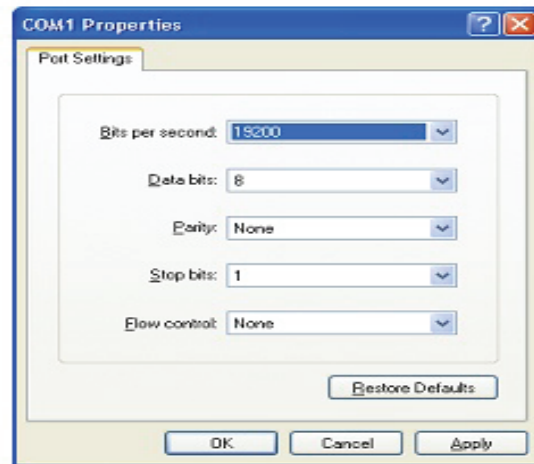
④ The panel shows up like thus image when configured properly. (If it doesn't, please try again from beginning)

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Assigning IP Address

Follow these steps to assign an IP address using Hyper Terminal

1. Execute "Hyper Terminal" on your PC

2. Connect RS232 Cable to the serial port of PC that you have selected in Chapter 4.3.1 - Configuring Hyper Terminal and the NETWORK VIDEO SERVER serial port while Hyper Terminal is executed.

3. Supply power to the NETWORK VIDEO SERVER.

4. A count down will start with the message "Press any key to stop auto-boot."

5. Press any key and then "Boot" Prompt shall appear as below.

6. You can see Network Configuration while [Boot] Prompt is running by pressing 'p' key again.

Here, inet on ethernet (e), host inet (h) and gateway inet (g) values are network configuration values. You should review these values and change accordingly. If you don't know what value you should assign, contact your network administrator.

Inet on ethernet (e) is IP address and subnet mask address of NETWORK VIDEO SERVER. IP address and subnet mask addresses are separated by colon (:). For example, IP address is represented by decimal numbers delimited by dot (.) like '192.168.1.27'. Hexadecimal numbers like 'ffffff00' in the case of '255.255.255.0' represents subnet mask address. Note that the numbers of subnet mask value are not delimited by dot. See the example in the above picture.

Host inet (h) is the address to which NETWORK VIDEO SERVER tries to connect to upgrade its firmware program in flash memory. NETWORK VIDEO SERVER first searches this host on the network on booting sequence. For more information on NETWORK VIDEO SERVER upgrade, refer to "**E. Updating NETWORK VIDEO SERVER's Newly upgraded Program**".

Gateway inet (g) is the gateway address of Network Camera

7. Type 'c' key to change the network configuration in [Boot] prompt. If you type 'c' key, NETWORK VIDEO SERVER shows you the information you can change its values and the current assigned values. You can change as the following figure.

```
Network IP Camera - HyperTerminal
File Edit View Call Transfer Help

 Serial Number: MNCL10B007051
 MAC Address: 00:0c:1c:00:2f:8b
 Boot Mode[1:Auto by flash, 2:Auto by tftp, 3:Manual] : 1
 Internet Address: 211.232.103.18
 Network Mask: 255.255.255.224
 Default Gateway: 211.232.103.1
 TFTP-Server Address :192.168.1.3
 Source Address in ROM: 0x1010000
 Target Address in RAM: 0x8000
 File Size of Byte: 0
 File Name: image.ram.microweb
 BOOT> c
 Boot Mode[1:Auto by flash, 2:Auto by tftp, 3:Manual] :
 Internet Address[211.232.103.18] :
 Network Mask[255.255.255.224] :
 Default Gateway[211.232.103.1] :
 TFTP-Server Address[192.168.1.3] :
 Source Address in ROM[0x1010000] :0x
 Target Address in RAM[0x8000] :0x
 File Size of Byte[0] :
 File Name[image.ram.microweb] :
 BOOT>
```

8. When you terminate hyper-terminal program after you changed network configuration, hyper-terminal program asks you whether you saved the session. If you saved the session, you can re-use the hyper-terminal. To re-use the session you saved, click Start --> Programs --> Accessories --> Communications --> HyperTerminal --> NETWORK VIDEO SERVER

```
HyperTerminal
 ⚠  You are currently connected.
     Are you sure you want to disconnect now?
        [ Yes ]    [ No ]
```

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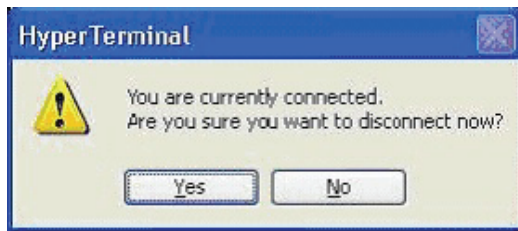
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Accessing NETWORK VIDEO SERVER

After assigning NETWORK VIDEO SERVER an IP address you may access NETWORK VIDEO SERVER and monitor real-time image on Internet. You may configure NETWORK VIDEO SERVER with any standard Web browser on local or remote network.
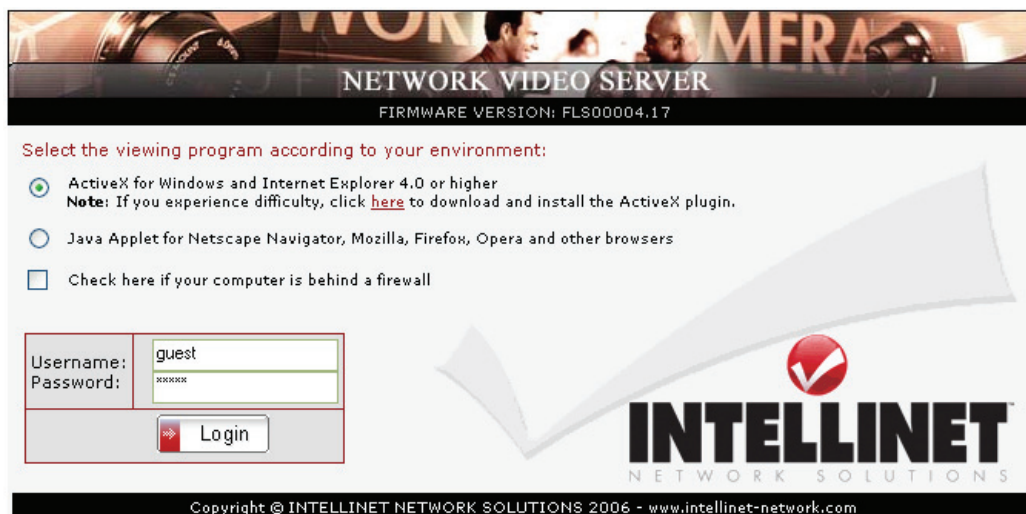
Starting Web Browser

Start your web browser and enter the IP Address of Network Video Server.

The Default Address: http://192.168.1.221

Login Page

This page is to login to NETWORK VIDEO SERVER.

Viewing Program

Windows Users with MS Internet Explorer select ActiveX, all other users select JAVA.

1. ID and Password

If you key in a user ID and password, you can access the camera to monitor real-time video.

With administrator's ID and password, you can access real-time video with administrator's authority. The default value of both user ID and password are "admin" and the administrator may change it at the Administrator Menu. Each ID and Password must be composed of no more than 10 bytes (e.g. 10 English letters). The guest account of the NETWORK VIDEO SERVER (default ID and Password "guest") has no access to the administrator tools at all.

2. Behind Firewall

If your PC is connected on a network with a firewall, you may not view real time video properly because the video TCP port is blocked behind a firewall. If you are behind a firewall, you may view real time video through the NETWORK VIDEO SERVER's Server Push Viewer that transmits video through web TCP port instead of the video TCP port. By clicking on "Behind Firewall" menu, you may directly connect to the Server Push Viewer when you access the NETWORK VIDEO SERVER homepage.

3. Active-X for MS Explorer Users

For all Microsoft Explorer users, the Active-X Control program is required. The program will be installed automatically when a user accesses the NETWORK VIDEO SERVER. For Active-X installation on your PC, just click 'Yes' to the question "do you want to install the program" on the pop-up window. If you cannot see images after installation, you should download and install Active-X manually.
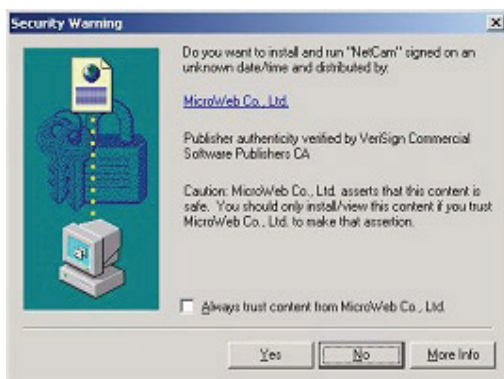
Windows 2000/XP Users, please note:

The installation of the ActiveX control requires the user of the system to have Administrator Rights. It cannot be performed by a regular user.

Manual installation of Active-X

If Active-X program fails to be installed automatically, you may install it manually.

The manual installation program is to be downloaded by clicking 'here' as follows:

Note: If you have any problem when you install ActiveX, visit http://www.intellinet-network.com/driver/NetCam.exe to download and install ActiveX manually.

Please follow the instructions to install Active-X manually.

Please follow the instruction to install
Active-X manually.

① When the panel appears, press "open"
   if you want to install right away.
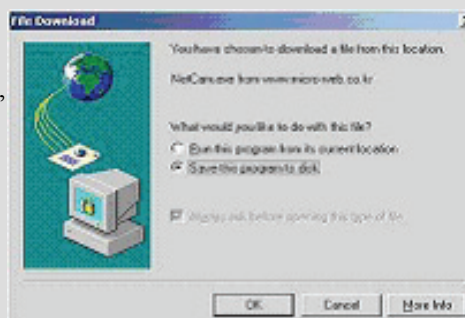
② Install Shield Wizard appears after
   the download has finished.

③ Check "Repair" then click "Next"
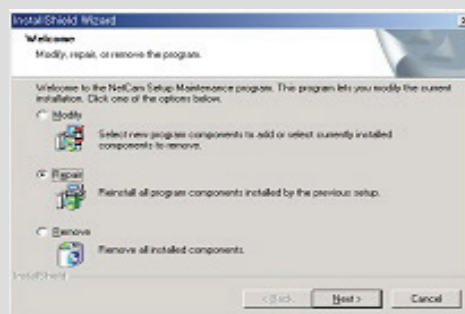
④ When installation is completed,
   press "Finish"

⑤ Go back to the Login page to access
   the Network Video Server homepage.

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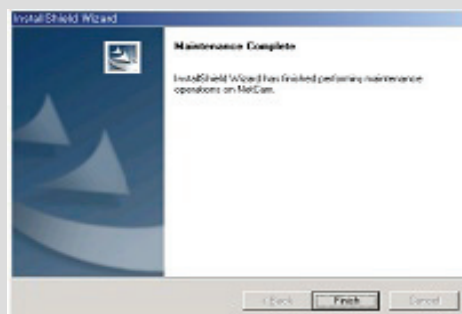
4) Java Applet for Macintosh or Unix/Linux System users and Windows Users who do not use MS Internet Explorer

If you are using Microsoft Windows as the Operating System and use MS Internet Explorer as the primary web browser, than there is no need to use the JAVA Applet.

In all other cases ActiveX technology is not available and JAVA is the option to go with.

Following users need to select JAVA:
- Linux Users (Firefox, Mozilla, Konqueror, …)
- Apple Macintosh Users (Safari, Firefox, MS IE)
- Windows Users (Firefox, Mozilla, Opera)

The JAVA Runtime Environment must be installed on the computer. In most cases this is the case.
But the latest Windows XP installations do not have JAVA installed by default.
JAVA can be obtained from SUN. The Web Site Address is: http://www.java.com.

NOTE

1. When using JAVA instead of ActiveX, the following commands are not available: Save Snapshot, Save AVI Video, View Image Only and Install XviD.

2. When using JAVA instead of ActiveX, the frame rate can be lower in comparison. ActiveX gives the user usually a slightly better performance.

3. Users of MSIE and Windows who need to use JAVA instead of ActiveX, perhaps due to high security settings, want to use Microsoft's VM instead of Sun's JAVA Runtime Environment. Microsoft's own JAVA VM requires fewer system resources and has proven to be more stable.
   The necessary settings can be changed in the Internet Options of MS Internet Explorer (Tools->Internet Options ->Advanced -> enable Microsoft VM and disable JAVA (SUN)).

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NETWORK VIDEO SERVER Homepage

Having completed the login procedure, you now see the NETWORK VIDEO SERVER homepage

1. Connected Client

It show the number of multi access users. (100 multi users can be accessed simultaneously.)

2. Administrator Menu

This button is to access the administration menu. However, only the user who has authority as an administrator can access the page with administrator's ID and Password **(please refer to Configuring Administration Menu)**.

3. Log out

Following that link returns the user to the login page of NETWORK VIDEO SERVER.

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4. Save, Stop save, snap shot, show only image

① Save, stop save

Users can save real time images from NETWORK VIDEO SERVER on PC.

Press 'save' button then select folder that you want to save images. (The image is saved as an AVI file.)
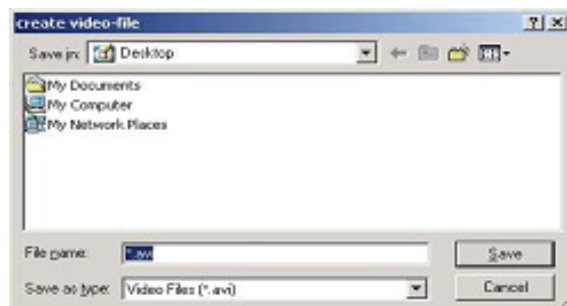
Once it starts to save images, "Saving" message and XviD Status appear.

To stop saving, press "stop, Save" button.
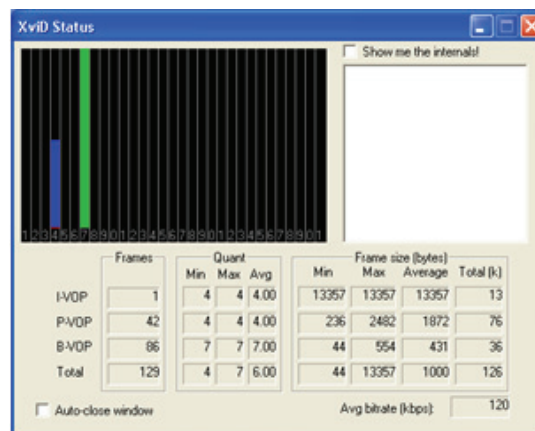
(Saving Mode)   (XviD Status)

NOTE

- **Click the "Install XviD" to install the necessary video codec on your system.** You only need to do this one time.

- **The video can be watched with Window Media Player or any other AVI compatible Video Player.** The XviD codec must be installed first though.

- **The camera generates AVI files in length of 20 minutes.** For example: file name2002_04_22_15_00, file name 2002_04_22_15_20…

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② Snap Shot

To save only one image, press "snap shot" button and then select a folder.
Save the image as JPG file.
(Default file name dedicate the date and time)
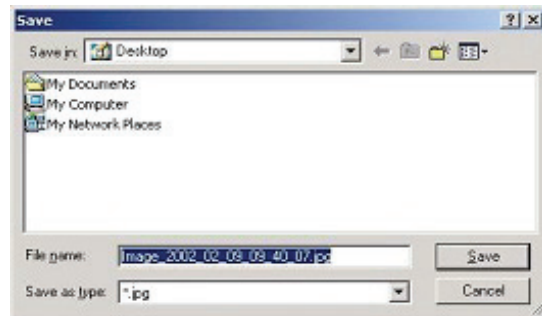
③ Show only image
When you want to see only video panel, Press "show only image".
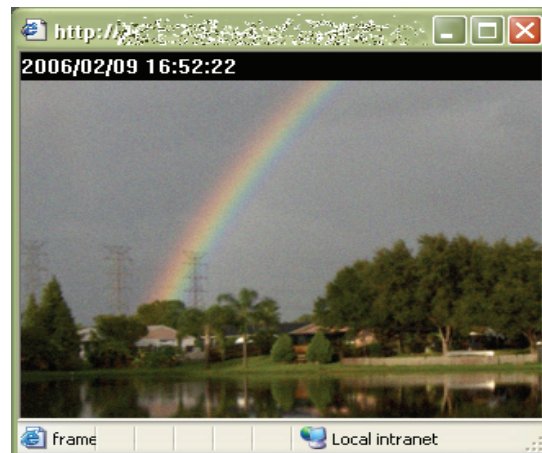
5. Frame rate

You may choose image transmission speed. If you choose the option 'Fastest', you will get images at the best possible frame rate. The transmission speed depends on your network line's capacity and PC's performance

6. Expansion

You may select the image size from 0.5 to 2. This function may be used when you want to expand image size on your PC. Expansion only works for images at the low or medium resolution.

7. Camera Name

You can set a camera name (please refer to Chapter 6.7 - System Configuration)

8. Location

This shows where the camera is located (please refer to Chapter 6.7 - System Configuration).

CONFIGURING ADMINISTRATION TOOLS

Press "**Administrator Menu".**

You can control the configurations of NETWORK VIDEO SERVER by Administrator's Tool.

Only authorized user can access administrator tool. If non-authorized users try to access it, you may see the caution message "You are not an administrator".

You may control all configurations for NETWORK VIDEO SERVER.
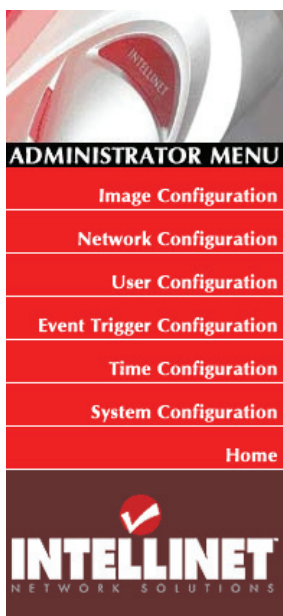
● **Image Configuration**
You can configure compression rate, image size, brightness, contrast, etc.

● **Network Configuration**
You can configure server IP, web server port, image transfer port.

● **Admin, User Configuration**
You can configure ID and password of administrator and users.

● **Event Trigger Configuration**
You can configure trigger condition, image capture option, trigger output.

● **Time Configuration**
You can configure the time of WebView.

● **System Configuration**
You can configure the server name, location, PTZ and see the system information.

Network Video Server User's Guide

Administration Menu's Overview

The table below provides a one-step overview of the Administrations Tools:

Image Configuration	To configure compression rate, image size, brightness, contrast, etc.
Network Configuration	To configure camera IP, web server port, image transfer port
User Configuration	To configure user ID & Password
Event Trigger Configuration	To configure event trigger condition, image capture option, trigger output
Time Configuration	To configure date and time
System Configuration	To configure the camera name, location, PTZ and see the system information.
Home	Move to NETWORK VIDEO SERVER homepage

To prevent any unauthorized use of NETWORK VIDEO SERVER access is strictly restricted to defined users only. The Administrator has exclusive access to the Administration Tools and can define the configuration and access rights for other users.

Enter the default ID and Password, then click "**SUBMIT**"
(Default ID and Password are all "admin")

CAUTION

It is highly recommended that you change the default Administrator Password for your NETWORK VIDEO SERVER as soon as possible – since all NETWORK VIDEO SERVER products are shipped with the same ID and Password as default.

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Network Video Server User's Guide

Image Configuration

NETWORK VIDEO SERVER Image Parameters

1. Video Input

Network Video Server supports two different types of analog video Signals: NTSC and PAL. NTSC is used in the United States mainly while PAL is being used across the globe, especially in Europe. Ultimately this setting depends on the standard which the CCTV Camera you connect supports. If the camera supports PAL you need to select PAL, even if you are located in the United States.

2. Compression rate

Level 10 = highest compression, smallest file, lowest image quality (recommended setting)

Level 1 = lowest compression, biggest file, best image quality

The file size of JPEG-compressed image depends upon the actual content of the image. Images containing much detail will generate larger files. Image quality is controlled through the level of compression; where high compression yields small files, while low compression maintains higher image quality at the expense of larger files.

You will find that at level 10 the relationship image size <-> image quality is the best. Higher compression values will increase the image quality slightly, but will also increase the resulting image size dramatically.

3. Image size

You may choose the image size VGA (640x480) or QVGA (320x240) and SQVGA (160*120).

Larger resolutions g lower frame rates while small sizes result in higher frame rates.

4. Vertical Flip

To turn the image view upside down (no effect on images uploaded via FTP or Email!).

5. Horizontal Flip

To switch the image view right from left (no effect on images uploaded via FTP or Email!).

6. Display Time/Date Stamp

To display time/Date stamp on image view (only Web Browser Live Image View, no Time Stamp in images uploaded via FTP or Email).

7. Brightness mode, Brightness

As a number is higher, image looks brighter (input values from 0 to 255).

8. Contrast

As a number is higher, contrast becomes clearer (input values from 0 to 15).

9. Hue

This controls the color temperature. As a number is lower, color becomes pink. On the contrary, as a number is higher, color becomes green (input digit from 0 to 15).

10. Saturation

0 = black/white type image, 7 = very colorful image (input values from 0 to 7).

11. Sharpness

0 = blurry image, 7 = sharp image (input values from 0 to 7).

12. Light Frequency

Specify the light frequency for the image sensor. This should be set according to the power frequency in your country, for example 60 Hz in the United States and 50 Hz in Germany.

11. Submit

Saves the current configuration data.

12. Cancel

Changes are not being saved.

13. Load Default Values

Set the configuration as default values. (No need to press "SUBMIT")

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Network Video Server User's Guide

Network Configuration

This screen defines the network type and addresses of the NETWORK VIDEO SERVER. Here you can configure the Camera's IP address, the DNS server, the DDNS Setup and the SMTP Server.

● **Network Configuration**

Set IP, subnet mask, gateway address:	manually
IP Address:	192.168.1.221
Subnet mask address:	255.255.255.0
Gateway address:	192.168.1.1
☐ send IP address to e-mail: (max 30 characters)	
Web server port number (80~1023):	80
Image transfer port number (8000~65535):	8080
Upgrade port number (8000~65535):	9000
Ptz port number (8000~65535):	10000
ETSP port number (8000~65535):	11000

1st DNS server address:	0.0.0.0
2nd DNS server address:	0.0.0.0
SMTP Server (max 25 characters):	0.0.0.0
Sender email address (max 30 characters):	
☐ Use SMTP Authentication	
Authenication method:	LOGIN
ID (max 30 characters):	
Password (max 10 characters):	
Realm (max 15 characters):	

DDNS Registration:	○enable ⊙disable
DDNS Server (max 30 characters):	www.dyndns.org
ID (max 10 characters):	
Password (max 10 characters):	
Host Name (max 30 characters):	
☐ DDNS manual update	
Status:	

submit   cancel

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1. **Set IP Address, Subnet mask, gateway address.**

To set the IP address, Subnet mask, and gateway address manually, you may select "manually" in combo box. In case of selecting "manually", you can configure them with the IP installer as well as this page.

(If you have trouble configuring network system information, please ask your network administrator.)

To set DHCP, you may select 'using DHCP'

When selecting "using DHCP", the IP address, Subnet mask address and Gateway address may not be activated at all. Under DHCP selection, the IP address may be sent to an email address whenever IP address is changed. Users in a local network area may check the IP address through IP installer.

NOTE

If you select "DHCP", you may see the rebooting message "Now the Network Camera is rebooting to apply the changes..." on Web Browser. After completing rebooting, Operating Status LED blinks once per second. (The message may not be changed at all so you must check whether the Operating Status LED blinks.)

To select DHCP, you must have DHCP server in the network. Otherwise, the IP address will be rebooted automatically as the previous IP address. It may take 4 minutes for booting.
After rebooting, please reenter the previous IP address.
You may see the fail message from "Network Configuration" page.

2. **Send IP address to e-mail**

To send camera system information (**Camera Name, Camera Location, DHCP IP address**), check in a text box and enter you email address. (You should configure your SMTP server information first)

3. **Server Port Number**

To set the Port Number for the Web Server. (The default port number is '80' and users can select from 80 to 1023)

4. **Image Transfer Port Number**

To set the port number for the image transfer. (The default port number is "8080" and users can select from 8000 to 65535)

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5. **Upgrade port number**

To set the Port Number for upgrading firmware. Default port number is "9000" and users can select from 8000~65535.

1. **PTZ port number (not applicable for NETWORK VIDEO SERVER)**

To set the port number for PTZ control. (Default is '10000' and users can select from 8000 to 65535.

CAUTION

Be careful not to duplicate port number between Image Transfer Port Number and Upgrade port number. If it is duplicated, the warning message may appear.

---

2. **ETSP port number (ETSP Client currently not available)**

To set the port number for ETSP (Event Trigger Saving Program). (Default is "11000" and users can select from 8000 to 65535. ETSP can be downloaded for free from the INTELLINET NETWORK SOLUTIONS Web Site once available.

3. **1st, 2nd DNS server address**

To map between IP address and domain name, you should enter you DNS server address.

If a user set the DNS server into camera, users can configure SMTP server, FTP server, and NTP server with its domain name.

DNS (Domain Name System)

DNS (Domain Name System) is to map between IP address and domain name. Every network device on the world has its IP address to be connected on Internet. And the device is to be connected not with its domain name but with its IP address. Common users are not familiar with IP addresses but the domain names.

If a user accesses a certain network device with its domain name, DNS server resolves the domain name into an IP address of the device and replies the result to the user. A lot of DNS servers are not on Internet worldwide.

---

4. **SMTP server**

This to enter the SMTP server IP address or host name to send camera system information by an email. You should configure this first to get camera system information by email.

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5. Use SMTP authentication

If you need user authentication for using the SMTP server, check in a box. and enter you ID, Password and Realm for your SMTP server. (The NETWORK VIDEO SERVER's SMTP authentication is supporting "LOGIN" method)

   - Authentication method: Choose the SMTP authentication method.
   - ID : Enter the user ID for SMTP authentication.
   - Password: Enter the user Password for SMTP authentication..
   - Realm : Enter the Realm for SMTP authentication (standard users: leave empty)

6. DDNS Registration (Please refer to the 'APPENDIX' for details).

To register the IP Network Camera to DDNS (Dynamic Domain name server) server, check in a "enable" box.

A dynamic IP address complicates remote access since you may not know what your current WAN IP address is when you want to access your network over the internet. The solution to the dynamic IP address problem comes in the form of a dynamic DNS service.

7. ID, password

Enter the ID and Password to find the registered IP Network Camera in DDNS server.

8. Host Name

Enter the Host Name to find the registered IP Network Camera in DDNS server,
i.E. 'yourhost.dyndns.org.'

9. DDNS manual update

You can update the DDNS service manually by selecting this checkbox and clicking on the submit button.

10. Status

To show the status of successful access for DDNS server.

17. SUBMIT

Send configured data to the NETWORK VIDEO SERVER to save the configuration.

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User Configuration

This screen is used to configure IDs and Passwords for an administrator and up to 5 users.

● **Admin, User Configuration**

– ID and password should be composed of 5~10 characters

	ID	password	retype password	maximum frame rate	authority
Admin	admin	•••••	•••••	fastest	All
User	guest	•••••	•••••	15	Viewing
User	sample	••••••	••••••	5	Viewing
User				0.1	None
User				0.2	None
User				0.5	None
				1	None
				2	Viewing
				5	All
				10	
				15	
				fastest	

submit   cancel

1. **User Account (max. 10 characters)**

   There is one administrator account and 5 user accounts. Account names can be changed.

2. **Password (max. 10 characters)**

   If you want to open your NETWORK VIDEO SERVER to everyone, you may not change default user's ID and Password, However you should change administrator's ID and Password with unique Ones of yours.

3. **Maximum Frame Rate**

   Set the maximum frame rate for this user account. This function is useful if you wish to reserve bandwidth for 'power users'. A 'power user' could be set to 'fastest' while a guest may only receive an image once every 5 seconds (setting 0.2).

4. **Authority**

   The Administrator may assign users' rights of viewing control. With the default setting, the administrator has all authority of configuration and the normal user doesn't have any right except to access the login page to see the image defaults "guest" for ID and Password.

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Event Trigger Configuration

● Event Trigger Configuration

Trigger condition

☐ Activation of digital input from `0` (0~24) to `24` (0~24).
    Trigger Condition: Digital Input Port = ◉ Closed ◯ Opened
☐ Motion Detection from `0` (0~24) to `24` (0~24).
☐ Periodically every `30` (1~3600) seconds from `0` (0~24)
    to `24` (0~24).
Motion detection sensitivity `6`

Image capture option

Before event (0~21): `1` seconds
After event (0~21): `3` seconds
Image capture frame rate: `1` fps
Image file name (max 10 characters): `_____` .jpg
Append to the image file name:
    ☐ camera IP address
    ☐ date and time
    ☐ trigger condition flag
    ☐ image sequence number

Trigger output

☐ supply voltage to output port for `0` (0~255) seconds
☐ send alarm to ETSP client
☐ send captured image to e-mail
    e-mail address (max 30 characters): `_____`
    e-mail title (max 30 characters): `_____`
☐ send captured image to FTP server
    FTP server (max 30 characters): `0.0.0.0`
    FTP server port (21~65535): `21`
    User ID (max 30 characters): `_____`
    Password (max 30 characters): `_____`
    Directory (max 30 characters): `_____`
    ☐ FTP Rename enable
☐ LAN Storage :Send captured image to Network Share/File server/NAS
    Network Share/File Server/NAS IP: `_____`
    NetBios Name: `_____`
    User ID (max 30 characters): `_____`
    Password (max 30 characters): `_____`
    Network Share/Remote Directory : `_____`
    ☐ Image Rename enable

[Submit] [cancel]

NETWORK VIDEO SERVER can perform certain tasks without user interaction. It can send images via Email or upload JPG images to an FTP Server, i.e. an Internet Web Server or a shared network drive. It can trigger external devices by supplying power to the 12V output port. And it can access shared network drives for storage of JPG images.

There are three trigger events:

1. Activated by external security sensors. You may connect external devices such as Infrared Sensor or Alarm Sensor to use with the provided terminal block (please refer to Appendix F – The I/O Connector).

2. Activated by the internal motion detection

3. Periodically every xxx seconds.

Please note:

Only one trigger condition should be selected at a time.

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1. Trigger Condition

This is to select option how to send an event signal to NETWORK VIDEO SERVER.

① **Activation of digital input port**

The NETWORK VIDEO SERVER receives an event signal from external devices such as infrared Sensor Alarm sensor etc.

The "Trigger Condition" (closed or opened) defines the alert state of the digital IO connector. There are two types of sensors on the market.

One type of sensor keeps the circuit open and closes the circuit in case it detects a motion

-> Trigger Condition = closed.

The second type keeps the circuit closed and opens it in case it detects a motion.

-> Trigger Condition = opened.

② **Motion Detection**

This is to detect motion from camera by S/W data comparison. When you select "Motion detection", the NETWORK VIDEO SERVER detects a motion triggered by camera lens. To detect motion the camera compares a previous image from present image. When the motion is detected, the camera recognizes the data changing through comparing the previous image data with present one.

Please note: It does not work at low light conditions or in darkness.

Motion detection sensitivity: Possible values are 0 to 9.

0 is the lowest sensitivity level. At this level the camera will detect virtually no motion.

9 is the highest setting. At this level the camera will generate a lot of false alarms. The changes in the image caused by the JPG algorithm are enough to trigger an alarm.

Levels between 3 and 6 give good results and are therefore recommended.

③ **Periodically**

The NETWORK VIDEO SERVER performs the action based on a time interval (entered in seconds).

About "from … to ….":

This controls the time window in which the trigger is active. The time is entered in the international 24 hour time format. Example: 6 = 6 am. 20 = 8 pm.

CAUTION

Using NETWORK VIDEO SERVER's integrated Motion Detection Function for security surveillance is not recommended as the function does not work as reliably as professional security sensors. The use of 3rd party Video Surveillance Software and Professional Sensors is recommended.

---

2. Image capture option

This is to configure image capture option when an event is triggered.

　① Before Event

　　You may set the starting time to capture image before event is triggered.

　　(Input limitation is from 0 to 21 seconds.)

　② After Event

　　You may set the finishing time to capture image after event is triggered.

　　(Input limitation is from 0 to 21 seconds.)

　③ Image capture frame rate

　　Set the frame rate from 1 to 15fps when the image is being captured.

　④ Image file name

　　You may designate image file name to send Email or FPT after image is captured.

　　All captured image are saved as a JPG file. (Example. "File name 000".JPG)

　⑤ Append to the image file name

　　You may append some information to Image file Name Camera IP address

　　A. Camera IP address : **Ex)** "file name _192.168.1.19.JPG

　　B. Date and time : **Ex)** "file name_20020218150030.JPG

　　C. Trigger condition flag

　　　In case of choosing "Activation of digital input port", "D" may be appended to image file name. **Ex)** "filename_D.JPG"

　　　In case of choosing "Periodically every…", "P" is appended to image file name.

　　　Ex) "filename_P.JPG"

　　D. Image sequence number

　　　If you select this option, you may classify the file that has same extend name.

　　　Consecutive numbers are from "000" to "999"

　　　Ex) If you designate file name as "camera" and select "Image sequence number", then the file names are: "camera001.JPG, camera002.JPG ….camera999.JPG"

Image capture option limitation

Configuration for image capture option affects memory capacity. If you configure this option to excess memory size, the Warning message " Not enough memory…" appears.

The total image capture frame rate is limited to 45.

(Before event time + After event time) x Image capture frame rate must be under 45.

For example, in case you configure "Before event" as 3 seconds, "After event time" as 2 seconds and "image capture frame" as 3fps, the total image capture frame rate is (3 + 2) X 3 = 15 fps.

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3. Trigger Output

Here you define which action the camera is to perform when a trigger condition is met.

1. **External devices signal output**

   This is to supply voltage to output port when events are triggered. (This option is only activated when you select "Activation of digital output" option in previous "Trigger Condition" option.)

2. **Send alarm to ETSP client** (currently not available, option not useable at this point)

3. **Send captured image via E-mail**

   This is to designate a person to receive captured image via Email.

   NETWORK VIDEO SERVER sends captured image to designated E-mail address through SMTP server. You may configure SMTP server and E-mail address where you want to receive. (E-mail address must be composed within 50 bytes. 50 bytes = 50 English characters).

4. **Send captured image to FTP server**

   This is to send captured image from NETWORK VIDEO SERVER when an event is triggered. Enter ftp server IP address, User ID and Password and select directory to save image. The FTP Rename Option should be used if the camera is set to replace an existing image on a server every xx seconds. This option makes sure that the image on the server will always show up for the visitors of your web site.

5. **LAN Storage: Send captured image to Network Share/File Server/NAS**

   NETWORK VIDEO Server can also store JPG images on a Network drive, i.E. a shared drive in your Windows Network Neighborhood, a NAS device or a Linux Samba share.

   Network Share/File Server/NAS IP: IP Address of the share.

   NetBIOS Name: optional, not required if IP Address is specified

   User ID: The user ID required to access the of the shared network drive

   Password: The password required to access the of the shared network drive

   Network Share/Remote Directory: Name of the remote directory.

   Image Rename: See FTP Rename Option.

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Time Configuration

This screen is to configure date and time.

1. Synchronized with NTP server

The NETWORK VIDEO SERVER automatically configures Date & Time through the NTP (Network Time Protocol) server. The NTP Server is based on Greenwich time. Select NTP server, IP address and Time zone. The Update Interval tells the Video Server how often to synchronize the internal time with the external NTP Server. Possible values are 2880 minutes (= 2 Days) to 1 minute. The default value is 1440 which represents 'once a day' and should suffice for most applications.

In case the NTP Server you chose is no longer available you can find a list of freely available NTP Servers at http://www.ntp.org/ (look for 'Public Time Server Lists').

The NTP Server can be entered with the Domain Name instead of the IP Address; however, this requires the DNS Server entries in the NETWORK CONFIGURATION Screen to be filled out correctly.

2. Set manually

Enter the Date and Time manually, then click "**SUBMIT".**

3. Enable Daylight Savings

This is to configure the Daylight Savings Time.

NOTE

NETWORK VIDEO SERVER does NOT support RTC (Real Time Clock). In case you choose the "Set manually" option, NETWORK VIDEO SERVER reinstate as default value "2001/01/01 00:00:00" after it is restarted.

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System Configuration

This screen is used to configure camera name, location, and image sensor oscillator for frequency, PTZ control and System information for NETWORK VIDEO SERVER.

● System Configuration

Server name (max 15 characters): my cam

Server location (max 30 characters): my home

Supply voltage to output port option: ○ supply   ⊙ don't supply

Direct public access to image via HTTP: ⊙ enable   ○ disable
    (http://ipaddress/jpg/imagename.jpg)

Image file name (max 10 characters): image .jpg

PTZ control: ⊙ enable   ○ disable

PTZ Controller Selection: PELCO P

SungJin Electronics SJ-2819RX
LG LPT-A100L
PELCO P
PELCO D

System Information:

Bootrom Version: BLU10002.2

Firmware Version: FLS00004.17

Mac Number : 00:0c:1c:02:14:05

[Submit]   [cancel]

Reboot (Restart) Network IP Server: [Reboot]
No Settings will get lost.

Restore Factory default Values: [Restore Defaults]
Warning: All Settings will get lost!

1. **Server name**

   You can enter the Name of your camera here. The name must not be longer than 15 characters.

2. **Server location**

   You may enter the location of your camera here. The location must not be longer than 30 characters.

3. **Supply voltage to output port option**

   This option is to supply voltage to the NETWORK VIDEO SERVER output port. The device can provide 12V, 150 mA for an external device. With this option turned on, the camera will always send out 12V to the output port. This setting overwrites any programming you may have made in the Event Trigger Configuration regarding the Output port.

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4. Direct public access to image via HTTP

Controls access to the live image via http command http://camera_address/jpg/image.jpg. This feature can be important when using the Video Server in 3rd party video surveillance systems. With Direct Public Access disabled a username and password must be provided in order to view the image. With Direct Public Access enabled no username and password is required in order to view the image.

5. Image file name (max 10 characters)

To increase security of this feature you can also control Image File Name.
Using a secure name such as 'sr55_ogu42' (example) provides security even if the Direct Public Access is enabled as it is difficult to *guess* the right address.
http://camera_address/jpg/image.jpg is easy to find out, but
http://camera_address/jpg/sr55_ogu42.jpg is more difficult.

6. PTZ control

This is to configure PTZ control mechanism of NETWORK VIDEO SERVER.
You may select PTZ control enable or disable.

7. PTZ controller Section

This is to choose the PTZ controller connecting to the NETWORK VIDEO SERVER.
NETWORK VIDEO SERVER supports the PELCO protocol for 3rd party PTZ Units.

8. System Information

This is to check system information for NETWORK VIDEO SERVER. You may see the model name, serial no., Mac no., and BootROM & Firmware version. (Please refer to the Chapter ' **Appendix E. Updating Firmware**.)

9. Reboot System

Network Video Server is essentially a computer and as such it may require occasionally restarts every few months to free up some memory. The Reboot Function allows you to remotely perform this task. You only need this function if you experience problems with your NETWORK VIDEO SERVER.

10. Restore Factory Default Values

Performing this function reloads the default configuration of your Network Video Server.

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PTZ CONTROL (only for use with PTZ CCTV Cameras)

This screen is to control PTZ function. This PTZ control box may be activated only if PTZ external devices are connected to NETWORK VIDEO SERVER and configure PTZ control enable in System Configuration screen.

External PTZ Devices must be compliant to the PELCO protocol.
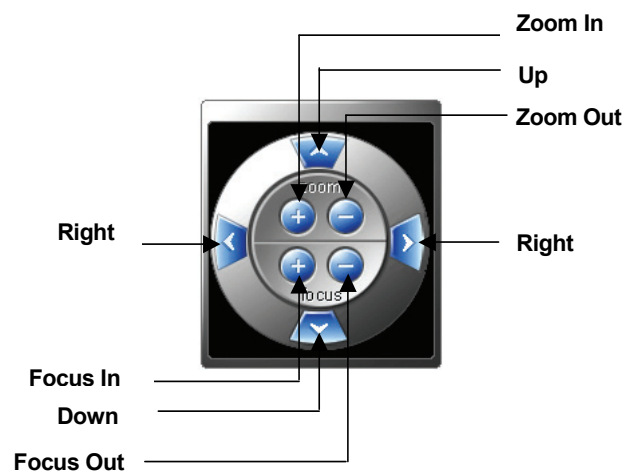
PoE (Power over Ethernet) Support

Power over Ethernet uses single Ethernet cable to transmit both power and data.

For PoE to work, the electrical current must go into the data cable at the power-supply end, and come out at the device end, in such a way, as shown below, that the current is kept separate from the data signal so that neither interferes with the other. The current enters the cable by means of a component called an injector.

As the NETWORK IP CAMERA 550710 and NETWORK VIDEO SERVER 550000 are PoE compatible, then they will function properly without modification when connected to PoE injector directly using standard LAN cable as shown below.

Connect Ethernet from PoE Injector

Connect to Ethernet

Power over Ethernet (PoE) Injector
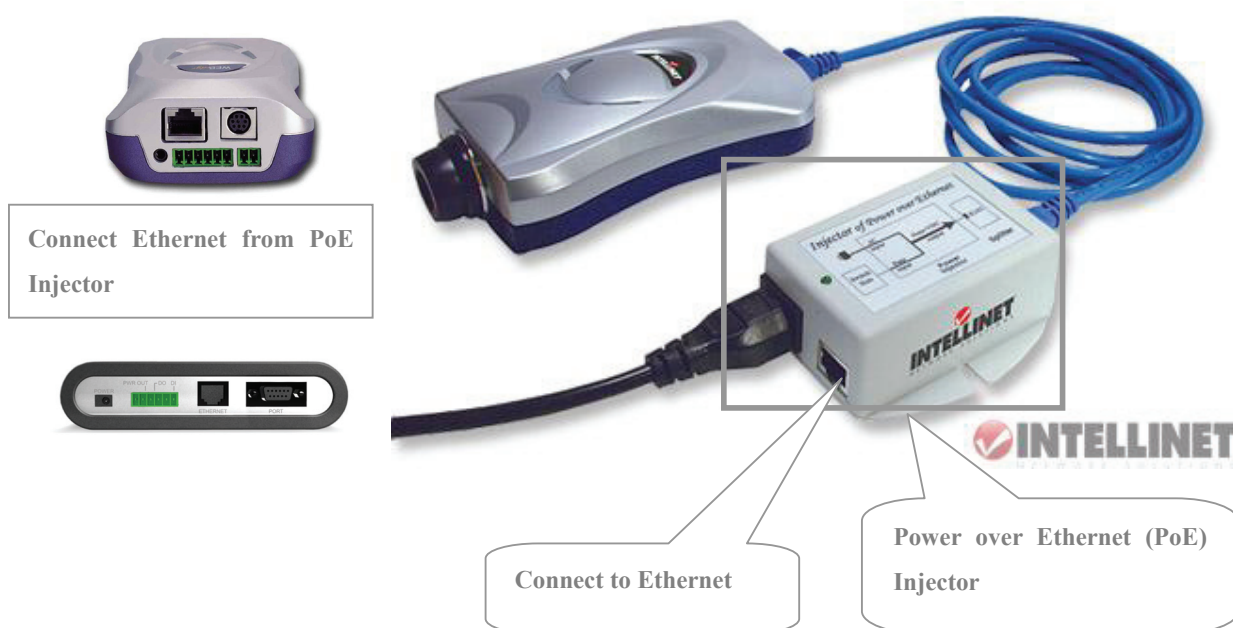
NOTE

As the embedded PoE modules of NETWORK IP CAMERA 550710 and NETWORK VIDEO SERVER 550000 are slightly different from IEEE 802.3af standard, use recommended PoE injector only. (Ask to where you bought 550710 or 550000)

Some of PoE switches in the market are not compatible with NETWORK IP CAMERA 550710 and NETWORK VIDEO SERVER 550000, although connecting to that switches does not cause damage to both ends.

APPENDIX

A. Technical Specifications

Image

Resolution: 640x480, 320x240, 160x120

Standard JPEG Compression – 10 levels of compression

Network

10BaseT Ethernet or 100Base-TX Fast Ethernet

Twisted pair category 5 cables, Standard RJ45 connector

Supporting protocol: TCP/IP, UDP, PING, ARP, FTP, TFTP, and HTTP

Configuring is achieved by private setup program and Web server built in administration page.

Hardware

32bit RISC Net ARM CPU

ZORAN hardware compression chip

384 Kbytes video frame buffer

4M flash memory

SDRAM 8Mbyte

12V Power supply adapter included

Under 6W power consumption

System Requirements

Operating systems: Windows 9x, Windows NT/2000, Linux, Unix, Mac, etc.

Internet Explorer 4.0 or higher.

JAVA applet for Windows, MacOS or Linux/Unix.

ActiveX for Windows/MSIE.

I/O Connector

1 Input to trigger the camera on external events.

1 Output of 12 V to signal external devices, max 150 mA

Installation

Assigning IP address via Windows IP installer program

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Approvals

EMC: FCC Class B, CE EN55022/1994, EN61000-3-2 & 3: 1995, EN50082-1: 1997

Operating Temperature

0 ~ 50 Degrees Centigrade

Others

Operating Status LED, Power LED, Image Capture LED, Network Packet Transmit LED
EEPROM clear button

B. Frequently Asked Question (FAQ)

Asks for the features

1. What is a Video Server?

A Network Video Server is a network CCD camera server with an integrated Internet Server, image compression device, flash memory, and many other features. No other hardware is necessary for use.

2. What if I forgot my password?

Every access to Video Server needs authentication. If you are not a permitted user, you may view the images or control the camera as long as the demo account is opened. The demo account user may use username as guest without any password to access limited features. If you are one of the managed users, you have to ask the administrators for the password. If you are the administrator, there is no way to recover the root password. The only way to regain access to Video Server is to restore the factory settings and reinstall it.

3. What is the advantage of the embedded OS?

Cameras with an embedded OS communicate directly with the user, the images or video is sent directly from the camera to the person accessing the camera. A Network camera without an embedded OS must rely on a third party server or a separate piece of software, meaning the images/video is sent to the third party server, then the user access the image from the third party server.

4. Do I need a public fixed IP address for each server?

No, that is not required. Using a free DDNS Server in addition to a router which is capable of forwarding different ports ('Virtual Server') is all you need to install multiple cameras in a local network and access them independently from the Internet.

5. Why can I NOT watch video from Video Server after it is authenticated?

There are many possible scenarios regarding this problem.

A. If you have just installed Video Server and are enable to watch the video, check if the video input is enabled and the video modulation in configuration page.

B. If Video Server is correctly installed and you are accessing Video Server for the first time using Internet Explorer, you need to adjust the security settings of Internet Explorer to allow the installation of the plug-in.

C. If the problem still exists after adjusting, the current users may be over the system allows.

D. In case that you use default account, the administrator may protect the video from the public.

6. How can I use a name instead of the IP address to connect Video Server?

To allow users to connect to Video Server through an easily memorized name, the administrator must installs the Video Server with a reserved IP address and assigns it with a name in the domain name service, then users can connect to Video Server by typing a name instead of IP address. If there is DHCP service in the network, the IP address must be excluded in the DHCP service to prevent from IP conflict.

7. What additional software is required?

Networking IP Cameras with an embedded Operating System (OS) should not need any additional software. An exception represents Video Surveillance of multiple Network IP Cameras with the capability of simultaneous recordings. In this case the use of a 3rd Part Video Surveillance Software is mandatory. A list of tested applications can be found at the INTELLINET NETWORK SOLUTIONS Web Site.

8. How does the built-in motion detection work?

It very simply compares what it sees now to what it saw in the last frame and based on a sensitivity you select will trigger an event. The event can be to send an email, to send an Image to a FTP server, or to send a series of images (before and after the motion is detected) to an email address or a FTP server-all with software built into the camera, nothing else is required.

9. What is the maximum length Ethernet cable I can use?

The same topology limitations that apply to any 10/100 Ethernet card apply, meaning the maximum segment length is 100 meters from switch/hub to the camera

10. How much digital video can be stored on a normal 200-gigabyte hard drive?

Network IP Cameras equipped with a compression technology that can store almost a month of continuous video on a 200-gigabyte hard drive.

11. What is Power-over-Ethernet (PoE)?

Power-over-Ethernet (PoE) or "Active Ethernet" eliminates the need to run power to devices on a wired LAN. Using Power-over-Ethernet, installers need to run only a single CAT5 Ethernet cable that carries both power and data to each device. This allows greater flexibility and significantly decreases installation costs in many cases.

14. **Can I view a Video Server image from my PDA?**

Network IP Cameras can now be viewed on most Windows CE, including Pocket PC and Pocket PC 2002, Windows Mobile 2003 and Windows Mobile 2005 devices, such as the Compaq iPAQ, HP Jornada, Dell Axim, Casio Cassiopeia and many other devices.

The free Pocket PC Viewer can be downloaded from the INTELLINET NETWORK SOLUTIONS Web Site.

C. Trouble Shooting

This appendix provides useful information to help you to resolve any difficulty you might have with your NETWORK VIDEO SERVER. Fault symptoms, possible causes and remedial actions are provided within a quick reference table.

PINGing your IP Address

By sending a packet to the specified address and waiting for a reply, the PING (Packet Internet Groper) can determine whether a specific IP address is accessible; it also provides a particularly useful method for confirming addressing conflicts with your NETWORK VIDEO SERVER on the network.

Having disconnected your NETWORK VIDEO SERVER, follow the instructions below in association with Symptoms, Possible Cause and Remedial Actions, on next page, and run the PING utility to troubleshoot TCP/IP problems on your network.

① Start a DOS window
② Type ping x.x.x.x, where x.x.x.x is the IP address of NETWORK VIDEO SERVER
③ The subsequent replies will provide an explanation as to the case as to the cause of the problem. Replies can be interpreted as defined in the table below:

PING Reply	Interpretation and recommendation
bytes = 32 time = xx ms	The camera responds to PING commands correctly.
Destination host unreachable	NETWORK VIDEO SERVER is not accessible within your subnet. You must obtain a new IP address
Request timed out	This IP address is not used by anyone and is available for use with your NETWORK VIDEO SERVER

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Symptoms, Possible Causes and Remedial Actions

Symptoms	Possible causes	Remedial actions
NETWORK VIDEO SERVER cannot be accessed from a Web browser	The IP address is already used by another devices	1.Disconnect your NETWORK VIDEO SERVER from the network 2. Run the PING utility (as described in PINGing your IP Address below) and follow
The Power LED is not constantly lit	The IP address is located within a different subnet	Run the PING utility (as described in PINGing Your IP Address, on page 51), If the utility returns "no response" or similar, the diagnosis is probably correct – you should then proceed as follows In Windows 95/98 or Windows NT, check the IP address for your NETWORK VIDEO SERVER is within the same subnet as your workstation: 1.Click "Start", "Settings", "Control Panel" and "Network". 2.Specify the TCP/IP adapter and click on "Properties". In Properties, Click "IP Address". 3.Check that the first 3 number blocks of the IP address of your NETWORK VIDEO SERVER match the first 3 number blocks of your workstation. If not, your NETWORK VIDEO SERVER may be on a different subnet and the IP address cannot be set from this workstation. You must set the IP address for NETWORK VIDEO SERVER from a workstation on the same subnet. Example: IP Address Camera: 192.168.1.221 IP Address PC: 192.168.1.xxx.
	Other networking problems	Trying replacing your network cable Test the network interface of the product by connecting a local computer to the unit, using a standard Crossover (hub-to-hub) Cable. If the above actions do not resolve the problem, NETWORK VIDEO SERVER maybe faulty, In this case, try to localize the problem by connecting NETWORK VIDEO SERVER to the serial port of a local computer, using the supported RS232 Cable
	Faulty power supply	Verify that you are using an provided power supply
The network LED is off	Faulty cabling	1.To verify that the cables are functional, PING the address of a known existing unit on your network. 2.If the cabling is OK and your network is reachable, your should receive the reply similar to this: . . . bytes = 32 time = 2 ms,

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The operating status LED	Faulty connecting	Verify that the power is well connected
Your NETWORK VIDEO SERVER works locally, but not externally.	Firewall protection Router configuration incorrect	Check the internet firewall with your system manager Verify the Router Setup.
A series broad vertical white line appears across the image.	The CMOS sensor becomes overloaded when the light is too bright. This can happen e.g. with sun light reflexes.	Direct exposure to extreme sunlight or halogen light may cause serious damage to the CMOS sensor. Reposition your NETWORK VIDEO SERVER into a more shaded location immediately. Note: damage caused to NETWORK VIDEO SERVER through over exposure to direct sunlight or halogen light is not covered under the product warranty.
Bad focus	Focus has not been correctly adjusted	Adjusting the camera manually till the image views clear.
Noisy images	Video images may be noisy if you are using NETWORK VIDEO SERVER in a very low light environment	To solve this problem, you need more light. Use the back light function. If not helpful, you may wish to consider replacing the basic lens with a more sensitive lens, if the lighting conditions within the installation area can not be improved
Bad quality images	The Display Properties are incorrectly configured for your desktop	Open the Display Properties in your desktop and configure your display to show at least 65'000 colors, i.e. at least 16-bit. Note: Using only 16 or 256 colors on your computer will produce dithering artifacts in the image.
	The camera is not Focused correctly	Referring to the above, adjust the camera manually

NOTE

If you still have a problem after reading this information, please contact your dealer or check the

FAQ on the INTELLINET NETWORK SOLUTIONS web site at

http://www.intellinet-network.com.

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D. Utilizing IP Addresses on Local Network

Introduction

Access to the Internet is achieved via Internet IP addresses.   Currently, IP addresses are limited. There are 5 classes of networks, and each network contains IP addresses. A network can only hold a limited number of IP addresses. The number of IP addresses depends on the network class. The 5 classes are labeled "A" through "E" with the most common one being the "C" class network.

IP Construction and Network Class

IP Construction

xxx	xxx	xxx	xxx
X1	X2	X3	X4

(xxx: 0-255)

e.g. 192.168.1.1

Network Classes

A Class: A network that contains IP addresses from 0 to 127 at room 'X1"

Network ID: X1

Host ID: X2, X3, X4

There are 128 A-Class networks in the world.

B Class: A network that contains IP addresses from 0 to 127 at room 'X1"

Network ID: X1, X2

Host ID: X3, X4

There are 65, 534 B-Class networks in the world.

C Class: A network that contains IP addresses from 192 to 223 at room 'X1'.

Network ID: X1, X2, X3

Host ID: X4

The most common network in the world; there are 2,097,152 C-class networks in the world.

D Class: A network that contains IP addresses from 224 to 239 at room 'X1'. D-class networks are used for multicasting, and are not allowed for common use.

E Class: A network that contains IP addresses from 240 to 255 at room 'X1'.

E-class networks are reserved.

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C Class Network

1. Features of Addresses

IP address: The three-digit number in room 'X4' is for the Host ID. The number ranges from 0 to 255. Among the numbers, 0 is used for Network ID, 1 is used for Router IP (Gateway address) and 255 are used for Broadcast address. The numbers from 2 to 244 are IP addresses that can be assigned to NETWORK VIDEO SERVER, PC etc.

Network ID: Identifies a network. Generally the first number assigned is Network ID.
Gateway address: The IP address of the router for connecting Internet and local network.
Broadcast address: The IP address for broadcasting. All devices connected on local network have the same Broadcast address.
Subnet Mask: Divides a local network into two remote networks. Subnet mask shows the IP quantity in a certain network. The number that can be used as subnet mask is limited (0, 4, 8, 16, 32, 64, 128)

2. Network Configuration

① To use as one network
   Network ID: xxx.xxx.xxx.0
   Gateway Address: xxx.xxx.xxx.1
   Subnet Mask: 255.255.255.0
   Broadcast Address: xxx.xxx.xxx.255
   IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.254

② To use as two Sub-networks (1/2 + 1/2)
   Sub-Network ID: xxx.xxx.xxx.0
   Gateway Address: xxx.xxx.xxx.1
   Subnet Mask: 255.255.255.128
   Broadcast Address: xxx.xxx.xxx.127
   IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.126

   Sub-Network ID: xxx.xxx.xxx.128
   Gateway Address: xxx.xxx.xxx.129
   Subnet Mask: 255.255.255.128
   Broadcast Address: xxx.xxx.xxx.255
   IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.254

③ To use as three sub-networks (1/4 + 1/4 + 1/2)

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 Sub-Network ID: xxx.xxx.xxx.0

 Gateway Address: xxx.xxx.xxx.1

 Subnet Mask: 255.255.255.192

 Broadcast Address: xxx.xxx.xxx.63

 IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.62

 Sub-Network ID: xxx.xxx.xxx.64

 Gateway Address: xxx.xxx.xxx.65

 Subnet Mask: 255.255.255.192

 Broadcast Address: xxx.xxx.xxx.127

 IP Addresses: xxx.xxx.xxx.66 – xxx.xxx.xxx.126

 Sub-Network ID: xxx.xxx.xxx.128

 Gateway Address: xxx.xxx.xxx.129

 Subnet Mask: 255.255.255.128

 Broadcast Address: xxx.xxx.xxx.225

 IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.256

④ To use as four sub-networks (1/4 + 1/4 + 1/4 + 1/4)

 Sub-Network ID: xxx.xxx.xxx.0

 Gateway Address: xxx.xxx.xxx.1

 Subnet Mask: 255.255.255.192

 Broadcast Address: xxx.xxx.xxx.63

 IP Addresses: xxx.xxx.xxx.2 – xxx.xxx.xxx.62

 Sub-Network ID: xxx.xxx.xxx.64

 Gateway Address: xxx.xxx.xxx.65

 Subnet Mask: 255.255.255.192

 Broadcast Address: xxx.xxx.xxx.127

 IP Addresses: xxx.xxx.xxx.66 – xxx.xxx.xxx.126

 Sub-Network ID: xxx.xxx.xxx.128

 Gateway Address: xxx.xxx.xxx.129

 Subnet Mask: 255.255.255.192

 Broadcast Address: xxx.xxx.xxx.191

 IP Addresses: xxx.xxx.xxx.130 – xxx.xxx.xxx.190

 Sub-Network ID: xxx.xxx.xxx.192

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Gateway Address: xxx.xxx.xxx.193

Subnet Mask: 255.255.255.192

Broadcast Address: xxx.xxx.xxx.255

IP Addresses: xxx.xxx.xxx.194 – xxx.xxx.xxx.254

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E. Updating Firmware

CAUTION
Follow the instruction as provided in this manual. During the process you must not disconnect Network Video Server from the network or power source. Otherwise your NETWORK VIDEO SERVER can be seriously damaged beyond repair. If the Firmware Upgrade Process failed and NETWORK VIDEO SERVER does not operate properly after the upgrade, please contact your dealer or get in contact with our technical support team on the web at http://www.intellinet-network.com/ipcamera.

Identify the version of Firmware

You can identify the version of NETWORK VIDEO SERVER's Firmware on System Configuration Page. It is important that you first check on the Firmware version your NETWORK VIDEO SERVER has currently installed.

Follow the below steps to check the present version of Firmware

① Connect to your NETWORK VIDEO SERVER's homepage.
② Click "Administrator Menus".
③ Move to System Configuration Page and check the Firmware Version.
   Also write down the Serial Number.

```
System Information:
                        ──────▶ Model: MNS-102
                                Serial Number: MNS-102A000005
                                Bootrom Version: BL010002.2
                        ──────▶ Firmware Version: FLS00004.17
                                Mac Number : 00:0c:1c:02:14:05
```

Download New Firmware

You can download the latest Firmware from the INTELLINET NETWORK SOLUTIONS Website

located at www.intellinet-network.com/ipcamera.

Be sure to verify that the Serial Number of the camera matches the serial number given on the

selection page. Video Server's Serial Number always starts with MNS-… .

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The Firmware Upgrade Process.

The NETWORK VIDEO SERVER can be upgraded via the LAN or remotely over the Internet (please see note below). Follow these steps to install a new Firmware:

1. Confirm that the NETWORK VIDEO SERVER is connected to your PC. (As long as you can access your NETWORK VIDEO SERVER Homepage, you can process upgrading)

2. Execute the Firmware Update Utility (which is included in the Firmware ZIP file from the web site).

3. Enter Camera's IP address, Upgrade Port number, and Password configured on the Network Configuration page. Then press the "Start upgrade" button. The upgrade process consists of three steps: "Transferring Firmware", "Writing Firmware" and "Verify flash memory", each step is indicated on progress bar.
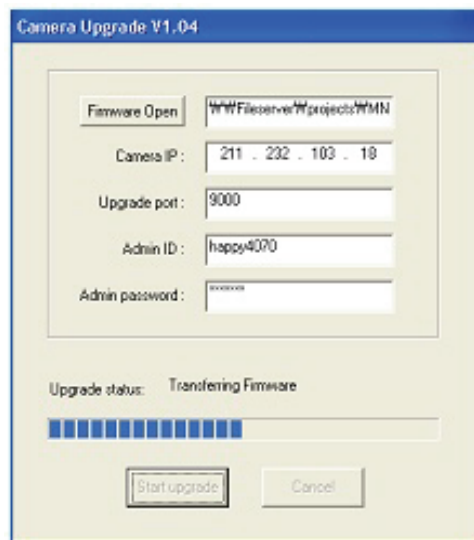
When completed upgrading, a message appears indicating that the upgrade has been completed. Click the "OK" button.
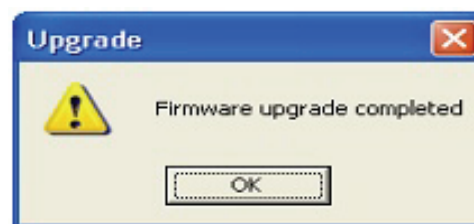
NOTE

A Remote Firmware Upgrade via the Internet requires the Upgrade Port 9000 to be opened in the Firewall and to be added to the Router's Port Forwarding Table.

Therefore the typical Port Forwarding Setup would look like:

1. Web Server Port = 80 (default)
2. Image Transfer Port = 8080 (default)
3. Upgrade Port = 9000 (default)

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F. The I/O Connector

The I/O Connector provides the physical interface to a digital output, and a single digital photo-coupled input that is used for connecting a variety of external alarm devices to the NETWORK VIDEO SERVER; including, IR-sensors, switches and alarm relay.

In combination with the configurable alarm facilities, you can quickly develop a variety of security applications that are triggered on time – or alarm based – events. The connector can also be utilized as an alternative connection point for DC power supply to the unit.

NO	Function	Description
1	Power GND (-)	Power for the external input/output devices (-)
2	Power DC12V (+)	Power for the external input/output devices (+)
3	Digital Out (+)	Output to the external output devices (+)
4	Digital Out GND (-)	Output to the external output devices (-)
5	Digital In (+)	Input for the external input devices (+)
6	Digital In GND (-)	Input for the external input devices (-)

1-2 PIN

Supply external devices with power. PIN1 is connected to GND terminal of device's power and PIN2 is connected to (+) terminal. However, the external device should be less DC 12V as a voltage and 200mA as an electric current.

3-4 PIN

PIN3 is connected to (+) terminal of external output device; PIN4 is connected to GND terminal of it. NETWORK VIDEO SERVER makes external output device operating by sending signal to external output device. However, the external device should be less DC 12V as a voltage and 200mA as an electric current.

5-6 PIN

PIN5, 6 are connected to the signal output terminal of external input device such as infrared sensor or alarm sensor. (This signal output terminal should be "Normally Open" type.)

G. RS 232 CABLE & Pan/Tilt/Zoom Control

The Serial Connector

In absence of a local network connection, the RS232 serial connector provides a physical interface for connecting a PTZ devices or computer to NETWORK VIDEO SERVER. This means that NETWORK VIDEO SERVER can operate as a standard unit -independent of any computer network.

Users can connect to NETWORK VIDEO SERVER by external mode.

| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | |

DSUB 9 PIN MALE

| 5 | 4 | 3 | 2 | 1 |
| 9 | 8 | 7 | 6 | |
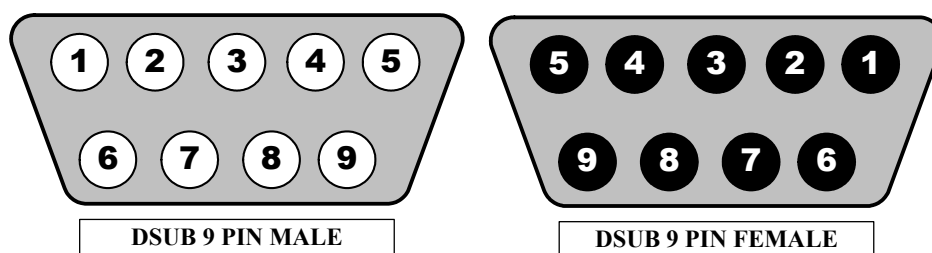
DSUB 9 PIN FEMALE

DIN8P MALE TO DSUB9P FEMALE		
PIN NAME	**DIN 8 PIN MALE**	**DSUB 9 PIN FEMALE**
DCD	1	1
TXD	2	2
RXD	3	3
DSR	4	4
GND	5	5
DTR	6	6
CTS	7	7
RTS	8	8
RI	9	9

PIN Function

DCD : Data Carrier Detect

RXD : Received Data

GND : Ground

CTS : Clear To Send

TXD : Transmit Data

DSR : Data Signal Ready

DTR : Data Terminal Ready

RTS : Ready to Send

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RI : Ring Indicator

Pan/Tilt/Zoom Control

Pan/Tilt/Zoom control interface of NETWORK VIDEO SERVER is initially set to support **RS485**. To operate Pan/Tilt/Zoom control through NETWORK VIDEO SERVER, camera or receiver is to be connected to 9PIN DIN connector of rear panel as shown below;
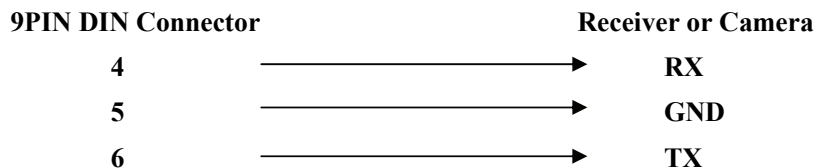
9PIN DIN Connector   **Receiver or Camera**

7   ⟶   +

8   ⟶   -
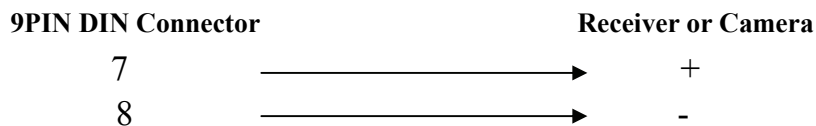
If your camera supports **RS232** instead RS485 for Pan/Tilt/Zoom control, then, follow the next directions.

1. Uncover the rear panel.
2. Find "J3" on the PCB board.
3. Change jumper setting as shown below.

J3
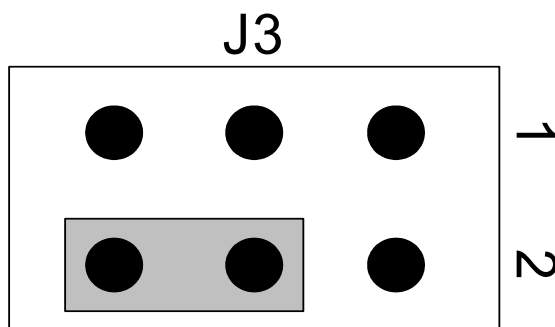
4. Then, cover the rear panel and connect your camera or receiver as shown below.

9PIN DIN Connector   **Receiver or Camera**

4   ⟶   **RX**

5   ⟶   **GND**

6   ⟶   **TX**

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H. Dynamic Domain Name Service (DDNS)

Your internet Service Provider (ISP) provides you at least one IP address which you use to connect to the Internet. The address you get may be static, meaning it never changes, or dynamic, meaning it's likely to change periodically. Just how often it changes, depends on your ISP. A dynamic IP address complicates remote access since you may not know what your current WAN IP address is when you want to access your network over the Internet. The solution to the dynamic IP address problem comes in the form of a dynamic DNS service.

The Internet uses DNS servers to lookup domain names and translates them into IP addresses. Domain names, such as www.intellinet-network.com, are just easy to remember aliases for IP addresses. A dynamic DNS service is unique because it provides a means of updating your IP address so that your listing will remain current when your IP address changes. There are several excellent DDNS services available on the Internet and best of all they're free to use. Two DDNS services are www.ods.org (ODS) and www.DynDNS.org. You'll need to register with the service and set up the domain name of your choice to begin using it. Please refer the home page or the service for detailed instructions.

A DDNS service works by uploading your WAN IP address to its servers periodically, your gateway-router may support DDNS directly, in which case you can enter your DDNS account information into your router and it will update the DDNS servers automatically when your IP address changes. Please consult your router's documentation for more information. If your router does not support DDNS, you can run a small client utility on any PC on your network which will perform the updating. The client utility is usually provided for free by the service.

Check the service's web page for further information, terms and conditions.
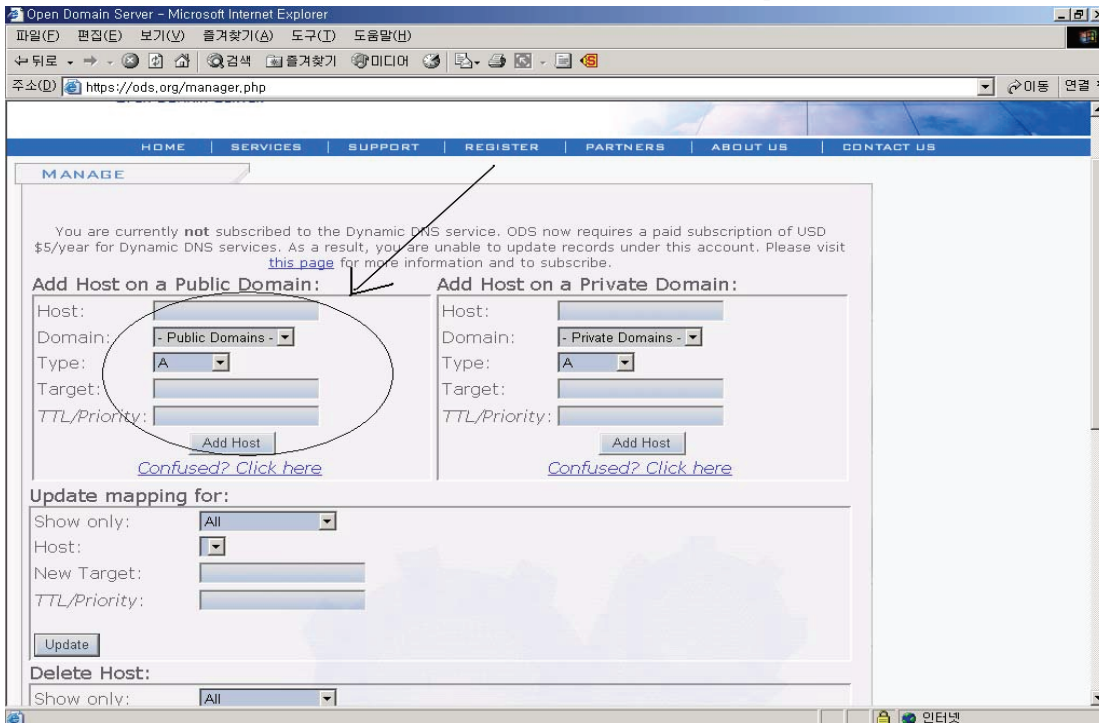
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How to use ODS DDNS service

1. Get access to ODS homepage (www.ods.org).
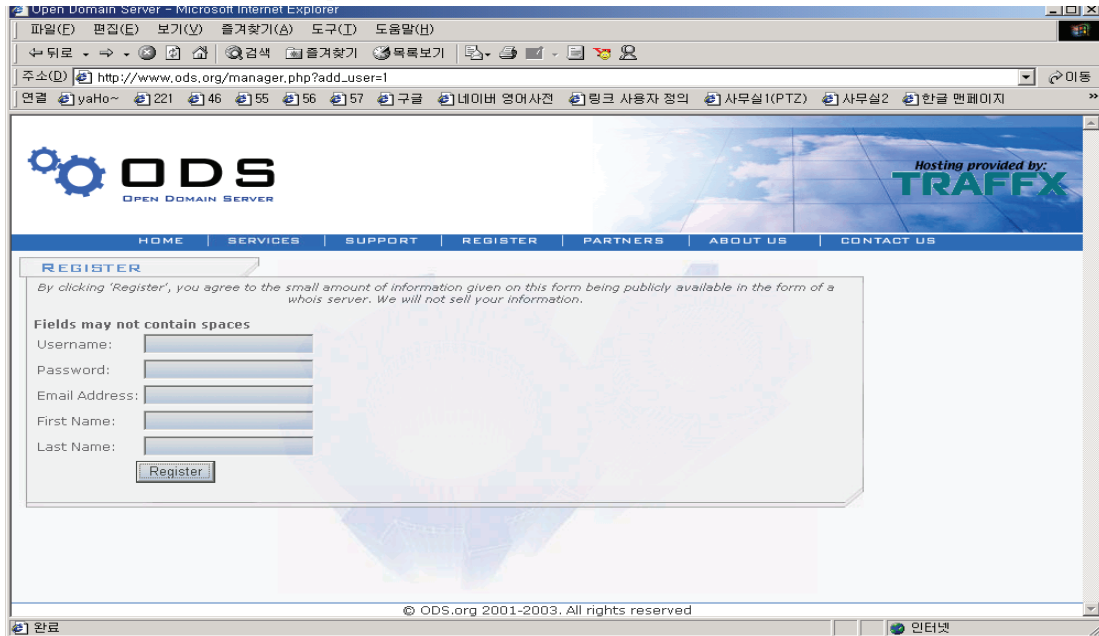
2. In case you didn't register your ID, you should select 'REGISTER' menu and then register your ID/ Password. Otherwise, you just login with registered ID/Password.

3. After you register ID/Password normally, you can see 'Manage' page.

If you want to use normal DDNS service among many services, you should fill in the blanks in a check box and then click "Add Host" button.

    ① Host: write name you want.

    ② Domain: Select domain you want.

    ③ Type: Select 'A' ('A' is normal)

    ④ Target: Write initial IP of equipment but just write any IP address that is in the form of

       "xxx.xxx.xxx.xxx"

    ⑤ TTL Priority: Do NOT select. This is option.

If you want to select "intellinet.dyndns.org" for domain name, type 'intellinet' in the Host field and then select dyndns.org for domain. Otherwise, please refer to the premium service.

NOTE

After completing DynDNS setting, you should activate DDNS support in Network Video Server. See page 69 for details.

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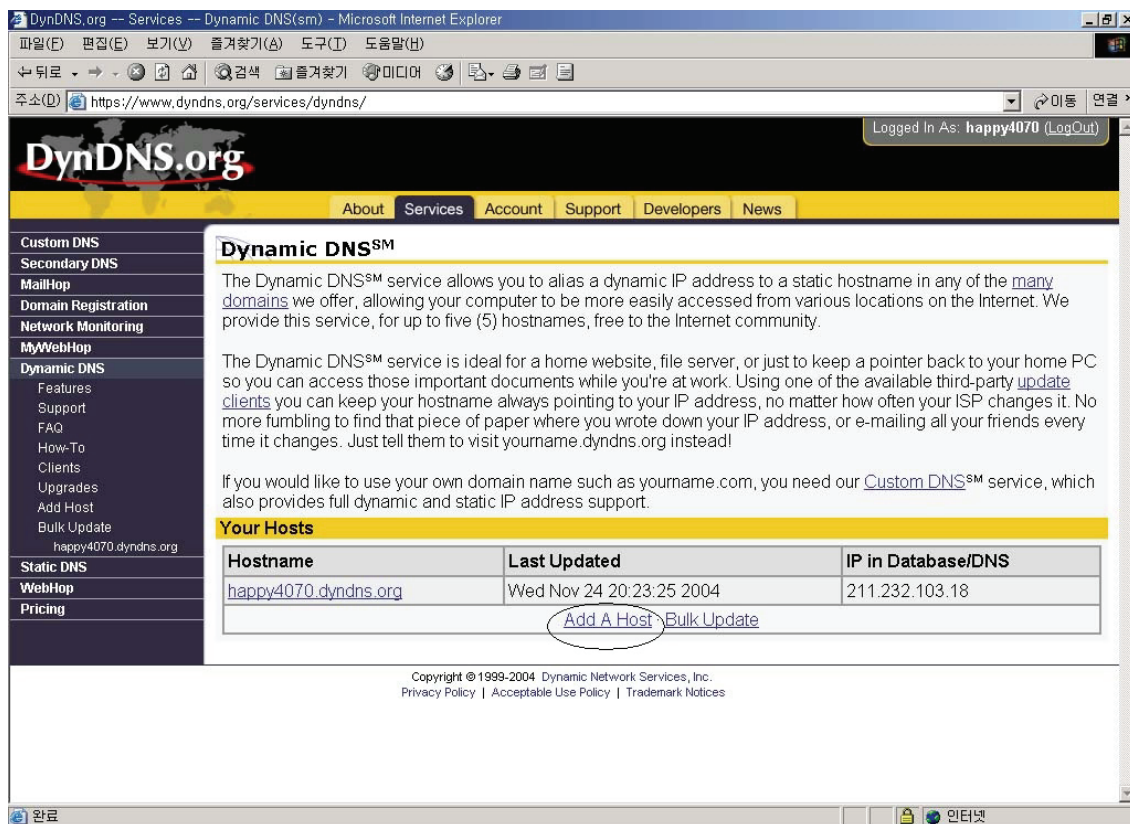
How to use DynDNS DDNS server

1. Get access to DynDNS Homepage (www.dyndns.org).
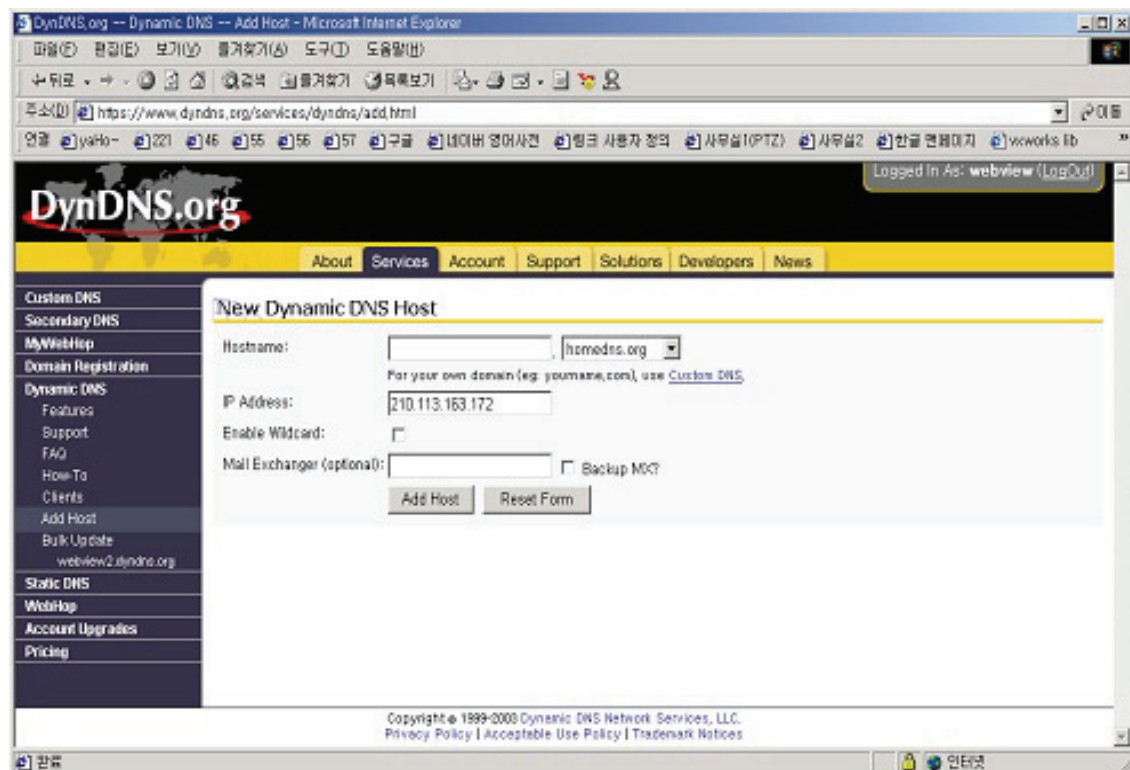

2. In case you didn't register your ID, click "Sign Up Now" and then register your ID.

Otherwise, you just login with registered ID.

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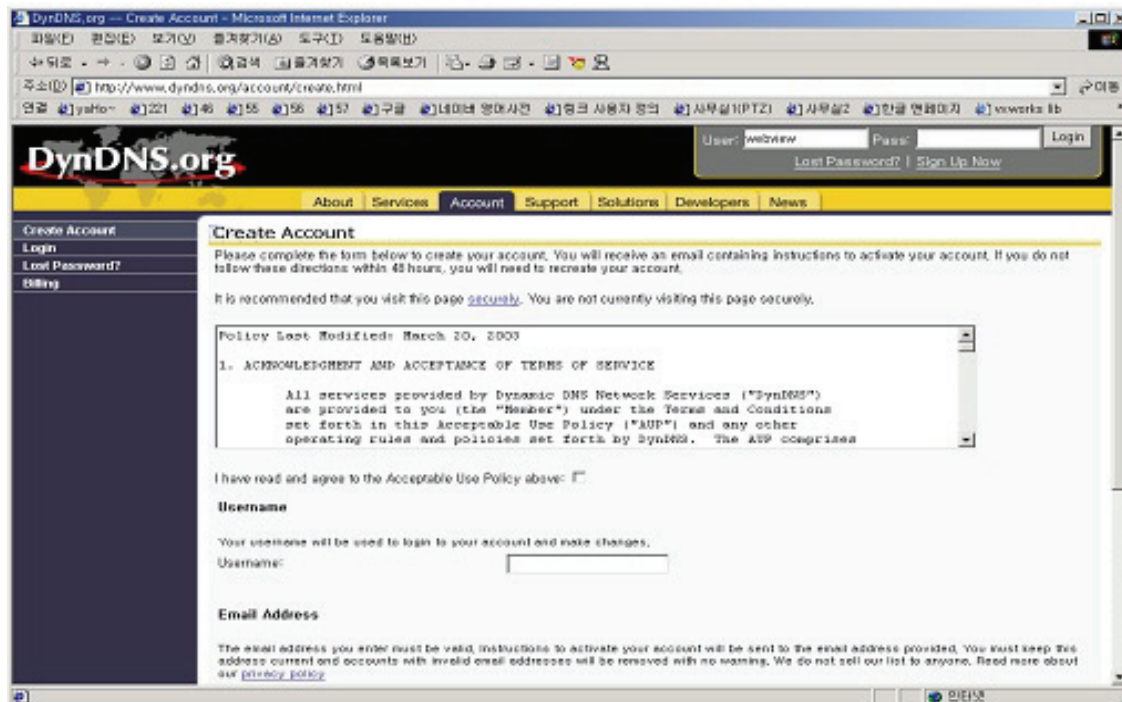
3. Click "Add Host", and then go to the next page.
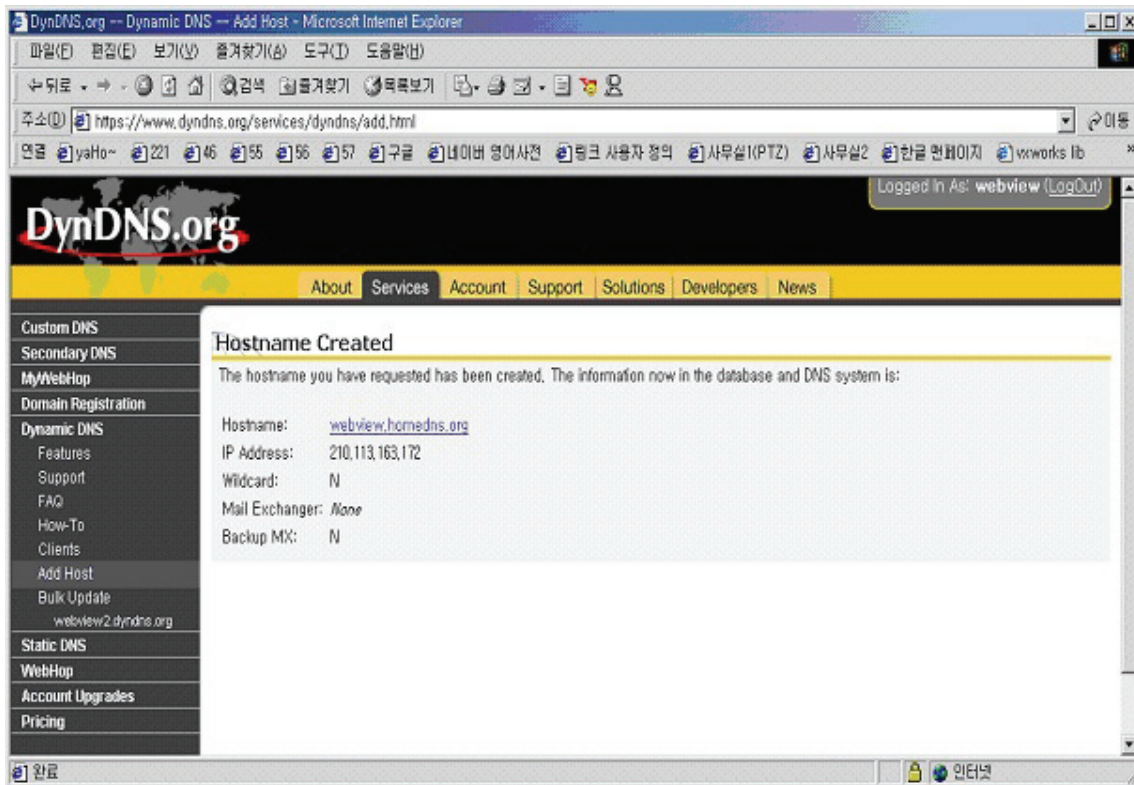
5. Enter Domain name you want and just leave other items, and then Click the "Add Host" button to register.
    If you want to know detail of each field, please refer to FAQ of each homepage.

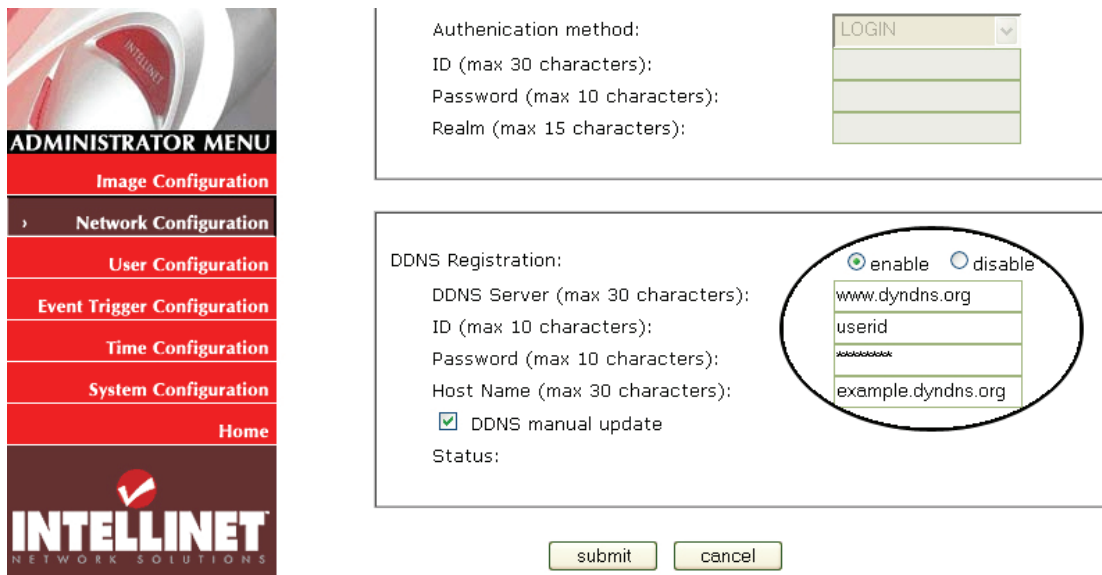5. You may see this page that shows setting information. after the register is succeeded,

NOTE

After completing DynDNS setting, you should activate DDNS support in Network Video Server.
See next page for details.

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DDNS registration for the NETWORK VIDEO SERVER

1. Login to the Administrator Menu, then open the NETWORK CONFIGURATION Screen.

1. Select the DDNS service (www.ods.org or www.dyndns.org).
2. Enter your DDNS Account User ID.
3. Enter your DDNS Account Password.
4. Enter the Host Name you have registered with your DDNS Service, i.e. example.dyndns.org or yourcamera.dyndns.org or intellinet.ods.org.
5. Activate the checkbox (x) DDNS manual update and click on SUBMIT.
6. After 30 seconds click on NETWORK CONFIGURATION to refresh the screen.
7. If register is finished successfully, you can see the message "Registration Success" under 'status'.

■ Before DDNS setting, you should register ID/ Password and domain name in ODS or DynDNS DDNS service. See the previous chapter for information on the two supported services.

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I. High Speed Solutions

This information is to help you access high-speed Internet services such as xDSL or a cable modem connection. However, most high-speed Internet Services provide you with some external IP addresses, there are several practical issues that should be considered.

AVAILABLE IP ADDRESS

ISP (Internet Service Provider) will provide you with several external static IP addresses ideally –in which case you can assign any one of these to your NETWORK VIDEO SERVER to make it fully accessible over the Internet. However, if your service provider supplies you with only one IP number – which is often the case – this IP number is normally assigned to your PC-leaving no connection available for your NETWORK VIDEO SERVER.

What can you do if your ISP is unable to provide you with an IP number?
There are a number of other options what you may like to consider: including:

NAT BOX

Short for Network Address Translation, NAT (Network Address Translation) is Internet standard that allows a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. A NAT box located where your LAN meets the Internet will handle all of the necessary IP address translations and provides:

- Internal IP addresses that are unique to your network – with no possibility of conflict with IP Addresses used by other companies and organizations.
- The possibility of combining multiple ISDN connections into a single Internet connection.
- An effective firewall for hiding internal IP addresses

NAT FEATURE IN WINDOWS 2000

Utilize the NAT feature in Windows 2000 to allow multiple Ethernet cards in your PC, and you can then use one of port for the Internet and the other for your internal network. With this solution, you can let your NETWORK VIDEO SERVER upload image streams to an external Web Server that is maintained and located with your ISP.

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ROUTERS AND FIREWALLS

Another solution is to use one of several small routers/firewalls currently available on the market.

These provide the necessary NAT functionality and allow complete independence for your PC, which can be switched off or rebooted without affecting the image transmission from your NETWORK VIDEO SERVER.

WINGATE SERVER SOFTWARE:

Running on a single Windows 9x/2000/XP computer, this software allows multiple users simultaneous access to the Internet through a LAN or higher-speed line, such as xDSL or cable modem connection; and effectively shares a single Internet connection with almost any type of client computer running TCP/IP.

For more advanced users, the WinGate 3.0 Standard and Pro versions also allow the administrator to change the IP bindings so that external requests may be routed specifically to your NETWORK VIDEO SERVER – running behind the WinGate software.

A typical Router Setup for NETWORK VIDEO SERVER looks like this:

You have to create a PORT FORWARDING (sometimes referred to as ADDRESS TRANSLATION or VIRTUAL SERVER) in the Router configuration.

External port 80 -> forward -> camera local IP : port 80 (TCP)
External port 8080 -> forward -> camera local IP : port 8080 (TCP)
("80" and "8080" are the default ports.)

You can setup multiple local Network IP Cameras in your LAN which can all be accessed from the Internet with just one public IP Address. The key is to assign different ports to the local cameras.
Example:
Camera1:
External port 81 -> forward -> camera local IP : port 81
External port 8081 -> forward -> camera local IP : port 8081

Camera2:
External port 82 -> forward -> camera local IP : port 82
External port 8082 -> forward -> camera local IP : port 8082

You then can access the camera from the Internet using the following URLs:
http://your_ip_address:81
http://your_ip_address:82

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J. Reinstating the Factory Default Settings

This information explains instructions in detail on how to set the default settings in the NETWORK VIDEO SERVER. In certain circumstances it may become necessary to restart or reinstate the Factory Default settings for your NETWORK VIDEO SERVER: This is performed by pressing the Reset Button, or using Hyper Terminal Setting. Follow these instructions to reinstate the product factory default settings

Using the Administrator Menu

① Login to NETWORK VIDEO SERVER.

② Open the Administrator Menu.

③ Open the System Configuration Page.

④ Press the "RESTORE DEFAULTS" button.

Using Hyper Terminal

① Execute "Hyper Terminal" as referred to Chapter "4.3.1 Configuring Hyper Terminal"

② Supply the power to the NETWORK VIDEO SERVER.

③ After a while, the count down starts with the message

"**Press 'p' key to stop auto-boot or Load-Default-Button under the NetCam for 3 seconds...**"

.At this time, press 'p' key. Then, [NETWORK VIDEO SERVER Boot] prompt shows like the right side image.

④ When you enter 'w', Administrator ID & Password reinstate as factory default 'admin'

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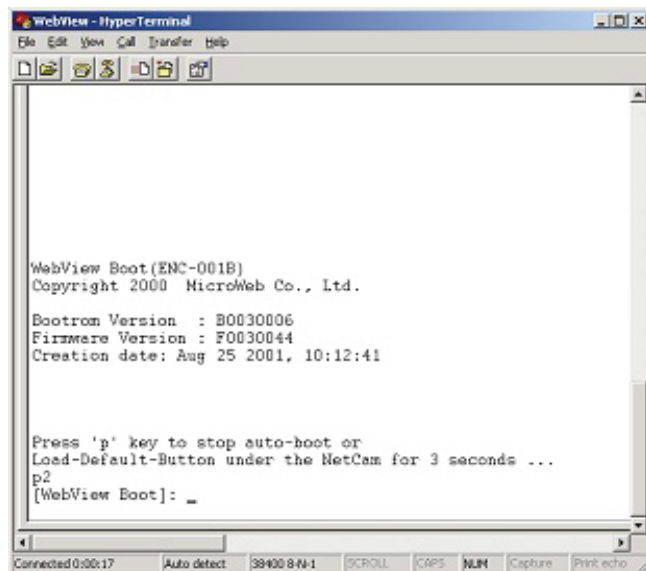
NOTE

Reinstating the original default settings will cause all parameters (Including IP address) to be reset.

Factory default setting

Administrator ID: admin

Administrator Password: admin

Guest ID: guest

Guest Password: guest

IP Address: 192.168.1.221

Subnet Mask Address: 255.255.255.0

Gateway Address: 192.168.1.1

Server IP Address: 192.168.1.200

Compression Rate: Level 10 (highest)

Image Size: QVGA (320x240)

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K. Glossary of Terms

ActiveX – A control (or set of rules) used by a browser. ActiveX controls are often downloaded and installed automatically as required.

ARP – Address Resolution Protocol. A method for finding a host's Ethernet address from its Internet address. The sender broadcasts an ARP packet containing the Internet address of another host and waits for it (or some other host) to send back its Ethernet address. Each host maintains a cache of address translations to reduce delay and loading. ARP allows the Internet address to be independent of the Ethernet address but it only works if all hosts support it. The ARP command can be used to set the IP – addresses for your product.

CGI – A standard for running external programs from a World-Wide Web HTTP server. CGI specifies how to pass arguments to the executing program as part of the HTTP request. It also defines a set of environment variables. Commonly, the program will generate some HTML which will be passed back to the browser but it can also request URL redirection. A set of rules (or a program) that allows a Web Server to communications with other programs.

DSL –Digital Subscriber Loop, A family of digital telecommunications protocols designed to allow high speed data communication over the existing copper telephone lines between end-users and telephone companies.

DHCP - A protocol that provides a means to dynamically allocate IP addresses to computers on a local area network. The system administrator assigns a range of IP addresses to DHCP and each client computer on the LAN has its TCP/IP software configured to request an IP address from the DHCP server. The request and grant process uses a lease concept with a controllable time period.

Ethernet – A widely used networking standard.

Firewall –A virtual barrier between a LAN (Local Area Network) and other networks, e.g. the Internet.

Frame Grabber Card – Plug-in hardware for "grabbing" images.

FTP - A client-server protocol that allows a user on one computer to transfer files to and from another computer over a TCP/IP network. Also the client program the user executes to transfer files. It is defined in STD 9, RFC 959.

HTML - A markup language used to structure text and multimedia documents and to set up hypertext links between documents, used extensively on the World Wide Web.

HTTP - A protocol used to request and transmit files, especially WebPages and WebPages components, over the Internet or other computer network.

Intranet - A privately maintained computer network that can be accessed only by authorized persons, especially members or employees of the organization that owns it.

IP – Internet Protocol. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.

IP number (address) – A unique number used by a computer on the network to allow it to be identified and found.

JPEG – A standard image format, used widely for photographs (also known as JPG.).

LAN – Local Area Network. A data communications network which is geographically limited (typically to a 1 km radius) allowing easy interconnection of terminals, microprocessors and computers within adjacent buildings. Ethernet and FDDI are examples of standard LANs.

PING - A protocol that sends a message to another computer and waits for acknowledgment, often used to check if another computer on a network is reachable.

PPP – Point–to–Point Protocol. A method allowing one computer to connect to another, usually via a modem over a phone line.

Protocol - A set of formal rules describing how to transmit data, especially across a network. Low-level protocols define the electrical and physical standards to be observed, bit- and byte-ordering and the transmission and error detection and correction of the bit stream. High-level protocols deal with the data formatting, including the syntax of messages, the terminal to computer dialogue, character sets, sequencing of messages etc.

SMTP – Simple Mail Transfer Protocol

TCP/IP - Transmission Control Protocol/Internet Protocol. Wide-area-networking protocol that makes the Internet work. TCP/IP is used on many networks, including the Internet. TCP keeps track of the individual packets of information and IP contains the rules for how the packets are actually sent and received.

URL – Uniform Resource Locator. An "address" on the network.

WAN – Wide–Area–Network. A communications network that uses such devices as telephone lines, satellite dishes, or radio waves to span a larger geographic area than can be covered by a LAN.

Wizard – A program designed specifically to guide the user through a procedure. Typically used for installation and configuration. InstallShield Wizard is required to download ActiveX manually.

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